

**MODERN DISCOVERIES
IN MEDICAL PSYCHOLOGY**

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MEDICAL PSYCHOLOGY

SECOND EDITION

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TO
DR. H. CRICHTON-MILLER

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PREFACE

A KNOWLEDGE of the simpler psychological facts is to be regarded as a part of an adequate education. The terminology of psychology has invaded the language, and frequently trips easily off the tongue of the layman. The physician who shows his ignorance of it is likely to lose caste in the eyes of his patients. Although a superficial knowledge may be dangerous, yet it cannot be denied that some understanding of the principles of psychology will often allow a comprehension of one's fellow-men which would be otherwise impossible.

Books on psychological theories are so frequently written by adherents of one particular school, who claim that they alone preach the true faith, that it is often difficult for those who seek after knowledge to know what to read.

An attempt has been made here to give an impartial description of modern psychological views without any of the fulsome non-sense which invades so many books—particularly on psychology—when they are not written exclusively for the specialist. The substance of this book was the material of a series of lectures given under the auspices of the University of London, but the lectures have been completely re-written and considerably extended.

It is hoped that it may interest the general practitioner, the medical student and even form an introduction for those who intend to read for the Examination for the Diploma of Psychological Medicine. The intelligent layman will find that it is not beyond his comprehension, and where the terminology is not clear in the text, explanatory notes have been inserted.

The term "modern" is a somewhat elastic one, but for the purpose of this book it is taken to include the last forty years. The chapter on Mesmer deals with matter previous to this period, but it has been added because of its introductory value and because the experiments of Mesmer were the first scientific attempt to examine and evaluate psychopathological phenomena.

INTRODUCTION TO THE SECOND EDITION

THE first edition of this book survived eleven years of political alarms, and six years of war. Moreover, it has been translated into such diverse languages as Italian and Bengali. I feel, therefore, that it must have filled some need and the purpose for which it was written has not been altogether futile. The fundamental facts regarding psychological theory and the history of their discovery and formulation have not altered since this book was first printed. The pendulum has swung over, however, so that for the moment attention is concentrated upon organic and physical methods of treating neurotic and mental illness. Many physicians who treat this type of disease are ignorant of the discoveries which have been made previously and disregard the value of psychological methods of healing. This is unfortunate, since sooner or later these physical methods may be evaluated and discovered to be less valuable than they had been thought. Then the pendulum may swing back again, and perhaps another Mesmer or Freud will appear. If the knowledge of the forerunners of psychological thought is kept fresh it will facilitate such a valuable event. I do not flatter myself that this book could do other than direct the intelligent reader to take an interest in mental phenomena, but if it does that its purpose will have been fulfilled.

In the meanwhile it has been felt that a chapter on physical methods of treatment would be of general interest, so it has been added. The book has otherwise been corrected and, where necessary, brought up to date, but the fundamental structure remains unchanged.

I am grateful to my wife for correcting the proofs and compiling the index.

148, *Harley Street*,
London, W.1.

CHAPTER ONE

MESMER AND THE DISCOVERY OF HYPNOSIS

THE term "psychology" is used rather loosely to express two branches of the same science, or even two separate sciences. The study of the normal mind, or academic psychology, began with the early Greeks, and has continued through the philosophers of the Middle Ages to the present time. Academic psychology, until recently, consisted of armchair speculations described in a complicated terminology and obscured by such a maze of philosophical theories that even the most enthusiastic student soon ate his fill of such dull fodder. Hughlings Jackson, the celebrated neurologist, said of the psychology of his time, apparently in disgust, that it was "only words," and, indeed, so it was. Academic psychology has been jeered at as describing the perfectly obvious in terms of the unintelligible, but, in spite of condemnation, it would be unjust not to admit that the more recent discoveries of the academic psychologists are of interest—such studies as those made upon the intelligence of monkeys, the behaviour of rats in mazes, and even the behaviour of children under experimental conditions, all show that at last our academic philosophers have left their armchairs and are abandoning their interminable arguments for ever. The branch of psychology to which this book is devoted is abnormal or morbid psychology. This does not mean that it is intended to deal only with the products of diseased minds, but that the discoveries to be discussed will have been based on the study of aberrant conditions. It is obvious that the study of the abnormal in psychology, as in any other branch of medicine, must throw a considerable amount of light on the normal. Although it is more satisfactory from a scientific point of view to study the normal and then proceed to the abnormal, it will be found that the opposite method is often the more valuable in this work. It is hoped occasionally to turn aside to glance at what types of men made these discoveries and the manner in which they were welcomed as discoverers.

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The first of those to whom we shall pay attention is Franz Anton Mesmer. Now, Mesmer did *not* discover hypnotism or mesmerism. The power of suggestion was known even before biblical times, and it may be said, with all due reverence, that many of the cures of prophets and saints have been based upon this power. Nevertheless, to Mesmer must be given the credit of first studying and attempting to understand the meaning of hypnosis.

There is a curious resemblance between Freud (who will be considered in a later chapter) and Mesmer. They both studied at Vienna, they both exploited new and startling principles, and they were both subjected to universal abuse. Both showed that they were superior to those who attacked them and met the attacks with a quiet dignity which won passionate adherents. Franz Mesmer was born at Radolfzell, on Lake Constance, in 1734. His parents were simple people, his father being employed as a forester. Nothing much is known of his childhood except that he frequently "played truant" from school!

Mesmer's mother wished him to become a priest, and at the age of nine he was sent to a monastery to be educated, and from there he went, at the age of fifteen years, to the Jesuit College at Dillingen in Bavaria. Here he learned theology, French and mathematics. He apparently read Descartes and was interested in his theory that the planets influence human life. From the Jesuit College he went to the University of Ingolstädt, and appears to have been a serious, dignified young man, very different from the student of to-day. At the University he still read theology, but spent his spare time studying astronomy, physics and mathematics. He started to read Paracelsus, who held similar views regarding the influence of the planets.

Mesmer now decided that he did not want to become a priest, and abandoned the Church for Medicine. The medical profession at that time was strongly under the influence of recent clinical discoveries, and Mesmer would be educated in the type of "scientific medicine" which has no place for anything that cannot be investigated by physical means. It is for this reason, as we shall see, that many of Mesmer's former teachers later became his bitterest enemies. He did not, however, arouse their suspicion as a student, and was conspicuous only as a very hard worker.

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In 1765, when he was thirty-one years of age, Mesmer passed his medical examination with honours. He had submitted a thesis in Latin on the influence of the planets upon human health. This should have made the examiners suspicious of him, but it was probably disregarded because of his fine reputation as a student.

Mesmer practised for five years as a general practitioner. He was a poor man and made little money—mainly because he spent his time curing the sick poor rather than forwarding himself into influential positions. In 1768 his monetary difficulties were solved through his marriage to a wealthy widow ten years older than himself. He does not appear to have been very fond of his wife, but her money allowed him to indulge his interests in science and music. With regard to the latter, it is interesting to note that Mesmer was responsible for launching Mozart as an established musician.

Mesmer now had an opportunity to investigate further his experiments regarding the influence of magnetic forces on the human body. In 1774 he came into contact with a Father Maximilian Hell, who was one of the Court astrologers. This man was treating patients with magnets of various shapes which were manufactured by a technician named Ganser. Father Hell knew nothing of medicine and refused to acknowledge that others, such as Paracelsus, had used magnets as healing agents before him. He collaborated with Mesmer in a number of experiments, and at first was inclined to treat him as a mere assistant, until the Viennese medical profession became irate at the impudence of a layman curing the sick. He then pretended that he was merely Mesmer's assistant. It was, as we shall see, upon Mesmer's head that the slowly gathering storm was to burst, but he cared very little for public opinion and, being a fully qualified doctor, was less vulnerable to attack than a layman.

Mesmer was fortunate in having an ideal patient to treat in his own household. His wife's companion, Fräulein Franzl Gesterlin, suffered from convulsions, vomiting attacks, inflammation of the intestines, retention of urine, toothache, earache, depression, hallucinations, trances, swooning attacks, temporary blindness, breathlessness and transient attacks of paralysis. Surely if he could cure such a multiplicity of complaints there could not be

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much wrong with his magnets ! He treated this young woman with ones of various shape, and they caused her to have a burning sensation which lasted throughout one night. After this she recovered from her attack. Following a repetition of this treatment she was finally cured, married and produced three healthy children.

It was of course impossible to bring about such astounding cures without gaining some notoriety, and he rapidly became the centre of attention in Vienna. Somewhat in the same way as about thirty-three years ago society ladies became interested in psychoanalysis and went about talking of their complexes, so the Viennese ladies wore "magnetised clothes" and ate their soup from "magnetised soup plates."

Mesmer now started to treat a number of patients at one sitting by means of an apparatus which was called a "baquet." This consisted of a wooden tub in which magnetised iron filings were placed and covered by a wooden lid. Through holes in this lid protruded flexible iron rods which touched the patients. A group of invalids could thus sit round the tub in a darkened room, and Mesmer made passes over them to hasten the healing "crises" or fits. He soon discovered that this impressive apparatus was not essential, and even succeeded in treating a patient who was in the next room.

Naturally his success caused a great deal of jealousy, and it is amusing to note that he was accused of not publishing a sufficient number of case notes, just as Freud, nearly two hundred years later, was accused of similar behaviour.

Mesmer's enemies now made a concerted effort to get rid of him, and they succeeded by utilising a case which should really have been one of his greatest successes. This was the case of Maria Theresa von Paradis, the daughter of one of the Empress's secretaries. This young girl had been completely blind since the age of three. She was, in spite of her affliction, an accomplished pianist and the protégée of the Empress. The best oculist in Vienna—Dr. von Störch—had treated her unsuccessfully, and her parents, in desperation, took her to Mesmer. He gave her concentrated treatment, and soon she could see. Now, the return of this girl's sight was not an altogether unmixed blessing. She found that she could not play the piano as well as previously, and

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since she had been earning her living as a concert pianist, this source of income was likely to stop. Moreover, the Empress had made her an allowance, and there was some doubt as to whether this would be continued if she made a complete recovery. Learned professors visited the young girl, and although it was quite obvious that she had recovered her sight, they denied that she could see "because she did not know what the objects shown to her were called." These doctors succeeded in frightening the girl's father so badly that he was determined to get his daughter away from Mesmer at all costs. Mesmer describes vividly how this irate man rushed into his house with a drawn sword and how mother and daughter fell fainting at his feet. He tried to persuade the young girl to go with her parents, but she refused. Although she stayed with him for five weeks, he could not succeed in restoring her sight, which had again failed. The medical profession of Vienna was delighted, and he was expelled from the faculty and told either to cease practising or leave the city. He left, and after wandering about for a short time decided to go to Paris. Here he hoped that he would be given a chance to prove the reality of his discovery. He wrote a memorandum on his discovery and presented it to the French Academy of Sciences, but it was not treated with much interest. He found the French doctors very avaricious, and says bitterly, "In France a physician's prestige is not increased by his treatment of the poor. And the successful treatment of four middle-class individuals counts for nothing against the cure of one marquis or count. Four cures of marquises are about equal to the successful treatment of one duke; and four dukes restored to health are nothing compared with the successful treatment of a prince." Finding this state of affairs, he started charging enormous sums for treating the rich, but insisted on treating the poor for nothing and at the same place as he saw his rich clientèle.

If the French scientists greeted Mesmer with a lack of interest, this was not so with the people. He rapidly became a fashion. In spite of this he decided to leave Paris, and went away to work quietly at Spa. His disciples did not allow him to disappear into obscurity, and a society called the "Society of Harmony" soon sprang up to propagate his discoveries. The growth of this society curiously resembles that of the International Society of

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Psychoanalysis which appeared to propagate Freud's discoveries—another resemblance between Freud and Mesmer.

Having such a strong following, Mesmer returned to Paris, and in 1784 Louis XVI appointed a Commission to investigate mesmerism. Members of this Commission included Lavoisier, the famous chemist, Bailly, the astronomer, Dr. Guillotine, the inventor of the machine which bears his name, and Benjamin Franklin. The Commission did not really try to discover whether Mesmer had cured anyone or not, but determined to discover whether his theories were true. Naturally they were unable to demonstrate "animal magnetism," and decided that Mesmer's cures were due to imagination. It seems absurd to us that these celebrated scientists did not find this "imagination" worthy of investigating. If only they had done so modern psychology might have been spared many agonising birth-pangs.

It is interesting to note that the Commission submitted, besides the report on the scientific side of the work, a secret morality report in which they suggested that the practice of animal magnetism might produce harmful results and be disastrous to public morality. The suggestion that his researches were damaging to public morality is exactly the same as was made about Freud when psychoanalysis first became widely known. Only one of the Commissioners, Antoine Laurent de Jussieu, a botanist, felt that there was something in Mesmer's work, and he published a minority report saying so.

The condemnation of his discoveries was a bitter blow to him and, moreover, he was beginning to be branded by his enemies in Paris as a charlatan. The Medical Faculty of the University of Paris issued an order that any physicians who practised animal magnetism would be excluded from the profession. Only one of the twenty-one doctors who had been Mesmer's pupils adhered to him and risked expulsion from his profession.

Thus ends the first period of animal magnetism. The blow which the Faculty had dealt it seemed to be almost a deadly one, and a swarm of cranks, crooks and charlatans swooped like vultures to get what advantage they could from the notoriety which remained.

Poor Mesmer retired into obscurity, and even the conflagration of the French Revolution, which swept away so many of his

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critics and enemies, did not bring him back into favour. He left Paris and went to live quietly at Karlsruhe, and in 1793 decided to return to Vienna. At that time the world was humming with rumours, and fears were very prevalent that the French would propagate their revolutionary principles, much as, now, people are fearful that the Soviets will try to spread Bolshevism all over Europe. Mesmer had lived a long time in Paris, and the foolish Viennese thought that he must be a French agitator and spy. He was thrust into prison and kept there for two months. When he was released he left Austria in disgust and went to live in Switzerland. He had decided that he could do more to forward his cause by writing than by trying to demonstrate his theories to the ignorant and prejudiced medical men of his day.

When the new Government was established in France he decided to return to claim such compensation as he could for his losses during the French Revolution. After a great deal of trouble he eventually secured a pension from the French Government and retired again to Switzerland and then later to Lake Constance. Here he lived, and saw no one except an occasional visitor—perhaps some doctor who had heard that he lived there and being in the district called to pay his respects and to discuss animal magnetism with him.

During this second period of animal magnetism, when it emerged once more from obscurity, and medical men once again took an enthusiastic interest in it, Mesmer was invited by the Prussian Academy of Medicine to lecture on his discoveries. He was seventy-eight at the time, and felt that he was too old to fling himself actively into the controversies which he knew always accompanied his work. He did, however, consent to interview a Member of the Academy, and he allowed him to publish his work on "Mesmerism, or the System of Reciprocal Influences." It looked as though at last Mesmer was likely to have the scientific homage for which he had striven all his life, but even in this he was disappointed. The Prussian War of Liberation caused so much unrest that it was never possible to give his work proper recognition, and when he was eighty-one years old, a feeble, demented old man, he suffered from a cerebral hæmorrhage and died.

Mesmer's life had been an heroic one, and it would be harsh to begrudge him the title of the father of morbid psychology, but

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we must not be too hard upon those members of the Commission which condemned him. The scientific method by which we firstly collect facts, then examine them and collate them and finally draw conclusions and discover laws about them had not then been clearly defined. Had this been so the work of the Commission would have been easier. Nevertheless it was mainly ignorance, stupidity and prejudice which drove this poor old man unhonoured to his grave.

It was while Mesmer was living in obscurity that the second period of interest in animal magnetism started.

Two young Army officers, the Marquis de Puységur and his younger brother, Count Maximus de Puységur, had been stationed in Paris when Mesmer was at the zenith of his fame, and they had been so interested in his teaching that they joined one of the Societies of Harmony and learned all that they could of animal magnetism. Later they retired to their estates at Soissons and started to treat the simple countrymen who lived around. These two brothers dropped much of the mummary which had become attached to mesmerism—they had no use for the soft music, the darkened rooms and the general air of mysticism which had formerly been considered desirable, if not essential. Instead of this they “magnetised” an old and enormous tree, and under this tree they performed their cures. It is interesting to note that Benjamin Franklin found a little later that any tree—magnetised or not—would do and, of course, anything else of sufficient suggestive value would suffice. The de Puységurs discarded the iron wands which Mesmer had used to promote crises or fits, and instead they encouraged the patients to sleep or really fall into a state of deep hypnosis. Now, this was something new, and when they started to tell the patient in a firm and compelling voice that he would soon be cured, they were at last elaborating a real therapy. Unfortunately they spoiled their discovery by their belief that patients had supernatural powers while under deep hypnosis, and they would bring new patients to one who was in the hypnotic trance in order that the hypnotised patient might diagnose and suggest the appropriate treatment for the other patient's illness.

This dangerous and unfortunate tendency towards mysticism, which, by the way, still exists amongst the more ignorant of lay

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hypnotists to-day, became manifest with Barbarin, a mesmerist of Ostend, who insisted that God alone was responsible for the cures and, if this was so, further scientific investigation was presumably impossible.

The French Revolution did much to wipe out mesmerism in France, but it did also much to free thought. Pinel was enabled to treat mental patients like human beings, and for the first time since the early Greeks the insane were shown kindness. Unfortunately mesmerism was obscured with mysticism both in Germany and France and, worse still, it had been entangled with phrenology, and this entanglement lasted for many years. This was very unfortunate, since if it had had a champion like Pinel, psychology and psychotherapy might have prospered.

In spite of these misfortunes, mesmerism was not entirely spoiled, and a new wave of enthusiasm started. Deleuse discovered that if he told a patient that he must do something after he had wakened from the hypnotic trance, the patient would carry out his suggestions. This was the beginning of post-hypnotic suggestion. He also said that he could cure patients who suffered from sleeplessness by telling them whilst they were hypnotised that they would sleep at night. It will be realised that hypnosis had travelled an enormous distance from Mesmer's crises or fits, and mesmerism was now becoming a real scientific treatment. Although Deleuse believed in Mesmer's magnetic fluid, he elaborated this idea by his belief that this fluid was capable of direction by the will.

Another step forward was made by the Abbé Faria, who was a picturesque and romantic figure, for he had travelled much in the East and dressed like an Eastern magician. Nevertheless, in spite of this, he made the most important suggestion that hypnosis was due to the receptive attitude of the patient. A young hypnotist, Alexandre Bertrand, suggested that the whole of the phenomena was due to the patient's "will," and that by influencing the will it was possible to make him forget something which he knew perfectly well. It was unfortunate that Bertrand died so young (at the age of thirty) and that the more stupid and spectacular of the mesmerists of that time obscured him by their exaggerated claims:

We now reach the top of the wave of enthusiasm which marked

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the second period of mesmerism. This wave of enthusiasm forced the Paris Academy to establish a Commission to investigate it. This Commission investigated the problem for five years, but in a most unscientific way. Its final conclusions were vaguely approving.

About this time a most important event took place. A certain Dr. Oudet extracted teeth from a patient while he was under hypnotic sleep and, as we shall see, laid the foundations for Esdaile's work later on. The second wave of enthusiasm was dying down, and the French Academy refused to listen to the supernatural marvels which the mesmerists were only too eager to press on them. The bizarre behaviour of the hypnotists caused them to be excluded from the great Paris hospitals, and mesmerism was again falling into disrepute.

The final wave of enthusiasm was to start in England, and it was due to John Elliotson. Elliotson was a physician of considerable repute. He was, moreover, a man of ability and initiative. He was the first person to use a stethoscope in England, and in 1831 was appointed Professor of Medicine at University College. When a French mesmerist, Dunotet, visited England he was very impressed with this exponent of mesmerism. Elliotson was the type of man who, if he knew he was right, did not care whether his attitude was offensive to others or not. He consequently made a great number of enemies. His colleagues refused to visit his demonstrations, and the Dean of University College tried to persuade him to desist. Elliotson refused, and in 1838 the Council of the College passed a resolution that animal magnetism was not to be practised in the hospital. Elliotson was ordered to cease treating patients in this way, and he not only refused to do so, but forthwith handed in his resignation.

When in 1846 it was his turn to deliver the Harveian Oration he was savagely attacked by the *Lancet*, in which he was called a "professional pariah." Elliotson made mesmerism the subject of his oration. He pleaded eloquently to the College to study hypnosis in a scientific manner, and pointed out the other famous discoveries which had been received with abuse and prejudice.

In 1843 he started a journal called the *Zoist*, and it ran regularly for about thirteen years. He recorded cases of amputation of various limbs which had been performed under hypnosis with no

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pain at all. In 1842 Mr. Ward, a surgeon, amputated a man's thigh under hypnosis, and he showed no signs of pain. When an account of this case was read before the Royal Medical and Chirurgical Society it caused an uproar, and some of the members were foolish enough to suggest that the man had been trained not to show pain!

An English physician practising in India, James Esdaile, read of hypnosis and decided to try it himself. He had to perform an operation on a Hindoo convict. He did not expect to succeed in mesmerising this man, since he knew nothing except what he had read on the subject. He succeeded, however, beyond his expectations, and the operation was painless. He therefore continued his experiments, and actually performed over a hundred painless operations. He reported his results to the Deputy Governor of Bengal, who was so impressed that he appointed a Committee to investigate them, and appointed Esdaile as superintendent of a small experimental hospital in Calcutta. The results were so successful that before the end of the period allotted for the experiments a number of native gentlemen wrote to the Governor begging that it should be continued indefinitely. The hospital, however, was closed, but Esdaile was put in charge of another which was supported by voluntary contributions from the natives. Before he left India Esdaile had performed painlessly at least three hundred major operations and an enormous number of minor ones. It is a shameful fact that this wonderful work was greeted by abuse and attacks by the European doctors in India.

It was about this time that chloroform was invented. Now, from many points of view it may be admitted that this was very unfortunate indeed. If only chloroform had not been invented for twenty years, it is possible that it would never have been needed. The value of hypnosis would have been recognised, and this would have led to an enormous amount of research upon it. There are many facts regarding it concerning which we are still ignorant, and Esdaile's hypnosis has since fallen into disuse as an aid to surgery.

We now come to the third of the trio of English hypnotists who did so much to establish it as a technique. James Braid was indeed the inventor of the name "hypnotism." Braid thought at first that hypnotism was trickery, but he was impressed by the

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fact that while under hypnosis one patient could not open his eyes. He felt that this was due to the fact that this man had been caused to stare at an object placed above the level of his eyes, until they closed. This impressed him a great deal, and he thought that some change had been produced in the nervous system. He therefore asked his friend Mr. Walker to stare at a wine bottle placed above the level of his vision. Mr. Walker did so, and soon his eyelids drooped and he fell fast asleep. Mrs. Braid had the same experience after staring at the sugar-basin. In 1843 Braid published a book called "Neurypnology or the Rationale of Nervous Sleep." The importance of Braid's emphasis upon the subjective nature of hypnosis cannot be exaggerated. Moreover, his lack of exaggeration, his scientific caution and his honesty tended to impress other medical men, whereas another with more blatant manners would only have aroused antagonism. '6

A humble country doctor named Liébeault was the cause of a revival in France. He used a most ingenious method to obtain subjects for hypnosis. His patients were mostly avaricious French peasants, and he would say to them, "If I treat you with drugs I shall be compelled to charge you, but if you are treated by hypnosis I will do it for nothing." It is said that his practice grew so large that he soon had no time for food or rest. Liébeault published a book on his work, but only one copy was sold. In 1882, however, he succeeded in curing a chronic case of sciatica which had been under the care of a famous neurologist, Bernheim. Bernheim was immensely impressed with this, and paid a visit to him, and the great neurologist became the pupil of the humble country doctor. Liébeault and Bernheim established together the famous Nancy clinic. It was in this clinic that the subjective nature of hypnosis was independently discovered, and here the foundations of modern hypnosis first appeared. Liébeault seems to have been a most endearing character, besides being a really great man. He was known and loved by the people for miles around as "old father Liébeault." Milne Bramwell tells a delightful tale of two little girls entering his clinic for treatment and Liébeault turning round and interrupting his work for a minute to say to each, "Sleep, my little kitten." Whereupon both of the children fell fast asleep. He made a few healing suggestions and returned to his work, leaving the little girls to awaken and go away when they liked.

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Such a gesture shows the naturalness and sensible atmosphere of his clinic.

Fourteen years after Liébeault started his clinic at Nancy, where he and Bernheim were neglected so long as provincial cranks, the great Parisian doctors began to realise that hypnosis was a reality. Richet stated that the phenomena were genuine, and then the great neurologist, Charcot, became interested in it. Now, Charcot was a supreme clinician, and his clinical methods had made him famous throughout the world. He seems, however, to have had little real understanding of hypnosis, and anyone interested in his clinic will find a lurid account of it and the results which followed in Axel Munthe's popular book "The Story of San Michele." Charcot indulged in public exhibitions and, as he kept more or less trained patients, he was able to persuade them to do the most extraordinary things, but the constant hypnosis for platform purposes is said to have undermined the health of the subjects. He fell into many errors, and certainly failed to distinguish himself in this branch of medicine. He did, however, draw the attention of certain medical men, including Sigmund Freud, to the study of hypnosis.

The Salpêtrière school founded by Charcot died out after a while, but Liébeault's school was revived some time ago by the exploitation of autosuggestion by Coué and Badouin. These formed the new Nancy School, and one might have thought that at last suggestion was about to come into its own as a method of treatment, but just as it was prevented previously by the discovery of chloroform, so now it was overshadowed by the exploitation of psychoanalysis and analytic methods of treatment.

We have now covered very briefly the history of the discovery of hypnosis. It met with terrific opposition throughout the whole story, and it is amusing to note that the physicians who are so firmly opposed to the realities of analysis now accept hypnotism as a valuable method of treatment! Perhaps when they have accepted analysis they will have found the next development in psychology worthy of their opposition.

It is now possible to consider the facts of hypnosis, and although we must leave the theories regarding it until a later chapter, it is necessary to understand that the phenomena are entirely subjective. There is, of course, no such thing as "magnetic fluid."

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The first fact which we have to consider is the susceptibility to hypnosis shown by the general population. There is some difference of opinion about this, and it is caused by the fact that some writers neglect light hypnosis and count only patients who are deeply hypnotised as having been susceptible. Liébeault found that only about three per cent. of ordinary persons were not hypnotisable. Milne Bramwell found that he could not succeed with two cases in five hundred patients drawn from his own practice. When he tried refractory cases not drawn from his own practice he found that he was unable to hypnotise twenty-two per cent. of them.

Contrary to popular belief, nationality makes no difference in the susceptibility to hypnosis, and Europeans are as easily hypnotised as Dravidian Indians. Sex, again, makes no difference; although most people believe that women are much more susceptible, it is not true. Children are said to be easier than adults, and healthy people are easier than nervous patients.

The induction of hypnosis, we have seen, can be brought about by a variety of ways. Mesmer's "baquet" was efficacious, and so was Puységur's magnetised tree. Nevertheless such fantastic methods are not used by modern operators, and some modification of Liébeault's or Braid's method is the one used. The patient is usually asked to gaze at some bright object which is held a little above the level of the eyes and about six inches to a foot away from them. It may be moved about slightly in order to increase the fatigue of the eyes. It is usually most convenient if the patient is lying on a couch and the operator stands at the end above the patient's head. Naturally a quiet room should be chosen, and it is best to exclude spectators, since they tend to distract the subject. When the patient has gazed at the bright object for some time one should make suggestions in a low, monotonous voice, trying to instil a sense of fatigue into the tones. The phrases: "You are getting tired and tired; you are so tired your eyes are closing. You feel sleepier and sleepier," etc., are the sort of suggestions to use. If the induction is successful, the patient will appear to become drowsy and his eyes will close. He is then in a condition to receive therapeutic suggestions. The hypnotic state can be terminated by suggesting that the patient will awaken when one counts ten or blows gently on the forehead.

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If the patient is not awakened by the operator, he will either wake spontaneously after some time or else will have a period of normal sleep and then awaken naturally.

The degrees of hypnosis have been described in various ways. Milne Bramwell suggests that three stages are all that are necessary to describe the phenomena. Firstly he describes "slight hypnosis," a condition in which the patient is drowsy but more or less conscious of what is happening. He is capable of receiving curative suggestions and he has no loss of memory for the events which have taken place. Then, secondly, "deep hypnosis," in which the patient falls asleep and has no memory of what happened while he was hypnotised, but this memory is capable of being reawakened when the patient is hypnotised again. It is worth while noting this fact, since we shall see that it is by no means unimportant when we come to consider the theories constructed to explain these phenomena. Although the memory has become inaccessible to the patient, it is not really lost, and is capable of resuscitation. The third stage described by Bramwell is that of "hypnotic coma." This is a very deep stage, and not only has the memory of what occurred during the hypnosis disappeared, but it cannot be recovered by hypnotising the patient again. Charcot described certain definite stages which he said always occurred in a certain order when hypnosis was induced. They are (1) Lethargy, (2) Catalepsy and (3) Somnambulism. Liébeault described six stages, but it is not profitable to describe them all here. It must be confessed that these stages are mostly artificial, and as each operator always encountered the stages which he described, while other operators were unable to discover them at all (or else found them different from the original description), it is obvious that the stages are not natural, but depend more or less on the suggestions consciously or unconsciously given by the operator.

When a patient is under hypnosis we notice that certain phenomena occur which are of great interest and which throw a light on things which we shall study later on. For example, if a patient is told that he is unable to move his right arm while he is hypnotised, it will be found that however much he tries he cannot do it. If one feels the muscles of his arm, it is obvious that he is contracting, let us say, his flexor muscles to bend the arm, but we shall be able

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to feel that he is also contracting the extensor muscles to prevent bending it. This fact, we shall find, is not uninteresting from the point of view of theories which we shall discuss later.

Various hypnotists have suggested that it is possible by the use of hypnosis to influence parts of the body which are not under conscious control. For instance, it is said to be possible to produce redness of the skin and even blistering by suggesting to the patient that the part to be affected has been burned. It is obvious that such experiments as these lay themselves open to charlatanism (or else to faking by the patient in order to obtain notoriety), and scepticism is often expressed regarding them. There does not seem any reason why they should not be genuine, since it is possible that we are dealing with a part of the mind which is in much more intimate contact with metabolism than our ordinary consciousness. Since our ordinary conscious mind allows us to blush with shame or go white with rage, and thus influence the blood-vessels of the skin, there seems to be little reason why we should not be able to deal with a part of our mind which could influence our bodies still further.

Some experiments of Heilig and Hoff are interesting in this connection. They found that they were able to produce "cold-blisters" on a patient's lip by suggestion, and, more interesting still, they were able to study the effects of emotion on the stomach by means of an opaque meal and X-rays. They noticed that it was possible to accelerate the movements of the stomach and to increase its power by suggesting that the patient was eating pleasant food. A suggestion of disgust and unpleasant things reduced the speed and power of the stomach's movements. There is also a considerable amount of evidence that the suggestion of a meal will increase the secretion of digestive juices and even the nature of the secretion. Recent work shows that the hydrochloric acid in the stomach can be increased by suggestion, and Heilig and Hoff stated that they noticed that the juice of the intestines was different according to the nature of the meal suggested. For instance, butter produces a copious flow of bile juice when it is eaten. The suggestion that the patient was eating butter was just as efficacious in the production of bile as if the patient really had had a meal containing it.

It has been found possible that illusions and hallucinations can

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be suggested while the patient is hypnotised, and it is from these that much of the popular idea of the nature of hypnosis has been derived. If a man is hypnotised and attempts to "read" a piece of blank paper, it is obvious that he is seeing things which are not there. That is to say, he is suffering from an hallucination. Again, if he is given a piece of cloth and told that it is a deadly snake and behaves accordingly, he must be distorting reality, and so suffering from an illusion.

The possibility of producing these distortions of reality is very important from the point of view of the theories which we shall study later. Still more important are post-hypnotic suggestions. It will be realised at once that the curative effect of hypnosis, if it is to be of any value at all, must be dependent upon the fact that the suggestions last longer than the hypnosis. If the effect lasted only while the patient was hypnotised, then the treatment would be of little value. These post-hypnotic suggestions are of great interest. A very good example was told to the writer by a well-known practitioner. This doctor was at a party, and was asked to hypnotise a fellow-guest, apparently to amuse the party. He did so, and suggested to her that the glass of wine which had just been poured out for her was really salt and water. The lady was awakened, and nothing was said about any post-hypnotic suggestion having been made. When the lady went to drink her glass of wine she spat it out in disgust. It was impossible to convince her that it was not full of salt.

The writer had an amusing case in which a post-hypnotic suggestion did not occur. In the hospital in which he worked there was a patient who, when she could not get her own way, used to produce a most fearsome squint, together with the drooping of one eyelid. He hypnotised her on two or three occasions and told her that her squint would not recur, and indeed it never did so. On one occasion she was told that when the clock struck twelve she was to go to get a drink of water. This patient was engaged in her ward duties, in which she took a great pride and interest. She was particularly busy when the clock struck twelve, and she said, "I do feel thirsty. I could do with a drink of water, but I'm too busy now; I'll get one later on"!

Gillespie and Henderson record a case of a boy who stated that he was hypnotised by a travelling showman and told to return to a

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certain spot at a certain time. This boy repeatedly made journeys of which he was unconscious until he "awoke" many miles from home. The travelling showman never appeared again, but this suggestion remained powerful. Such cases as these must not be taken for granted, since it is possible that the boy had invented the story to explain these journeys which he was forced to make for some other reason of which he was unaware.

These cases will suffice to show that even when the patient appears perfectly normal, when there is no question that he is under hypnosis, the suggestion is still there, and is ready to produce its effect even some time after it was made and in the absence of the physician.

We have seen that Esdaile in India utilised hypnosis as an anæsthetic, and it has been used many times since. Bramwell even sent a patient to a dentist some distance away. He had previously hypnotised her, and told her that when the dentist gave her a note instructing her to go to sleep she would do so. The dentist gave her the note, and she went to sleep. He extracted sixteen stumps, and she stated afterwards that she had felt no pain. This fact was witnessed by sixty doctors and dentists, so there is no possibility that it was not genuine. Hosts of surgical operations have been performed and confinements have been made painless under hypnosis. The reason why it is not used more extensively is that it is difficult to induce hypnosis deep enough to prevent pain, and only about ten per cent. of patients are suitable as subjects for surgical anæsthesia by this method. The advantages are considerable, since there is no unpleasant sensation during the induction, the patient can be placed in any position without risk during the operation, and no clumsy mask has to be held over the face. Moreover, after the operation hypnosis can be used to prevent pain during the dressings, and the healing is said to be accelerated—probably because of this fact.

Hypnosis in medicine has usually been used as a treatment for nervous diseases. It must not be supposed that nervous diseases of organic origin, such as cerebral hæmorrhages—strokes—and so on, in which there is actual organic damage to the brain, are suitable for treatment by hypnosis. Hypnosis is only useful for those nervous diseases in which there is derangement of the working rather than the machinery of the brain. Such cases were those which

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were called "shell shock" during the First World War. Although they were given this name, they were not really due to the damage produced by high explosives, but rather to the fear caused by the intolerable conditions. These cases were cured very rapidly and successfully during the war and shortly after it. The symptoms disappeared and the patient appeared well. The hypnosis, however, did not produce a permanent result, and the symptoms would recur if there was any likelihood of the patient being returned to the front. This is the great disadvantage of hypnosis as a method of treatment. One can make the symptoms disappear quite easily, but they tend to recur very rapidly, or else the patient produces another symptom, and as soon as that is cured yet another appears, so that one seems to be dealing with a hydra-headed monster which produces symptom after symptom until either the physician or the patient gives up in despair. It would be unfair to say that this always occurs—it certainly does not, but as one has not removed the tendency towards illness, it is naturally a frequent recurrence.

It is for this reason that hypnosis has fallen into more disuse than it should have done, and possibly it will return one day, perhaps as some modification of other methods.

It was the belief of the mesmerists that a patient under the influence of hypnosis was capable of supernatural acts, and it will be remembered the Puységur utilised an hypnotised patient to diagnose and suggest treatment for other patients. There is no evidence that clairvoyance or any other supernatural powers can be evoked during hypnosis. There is, however, a little evidence that patients under hypnosis may use their ordinary powers more efficiently or economically, so as to produce a better result, than they would have done had they been in a normal state. For instance, Hadfield measured a patient's grip and then hypnotised him and suggested that he was very strong. The grip produced while under hypnosis was a third stronger than that produced in his normal state. There is some doubt, however, in cases such as this as to whether the patient knew the purpose of the experiment. If he did so, he might unconsciously fail to exert his full strength before hypnosis. Again, there is some evidence that patients have increased intellectual powers, although not greatly so, and an increased sense of the passage of time. Hull believes—and this is probably correct—that it is rather that the patient has accepted

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the suggestion that he has these increased powers, and this gives him the sensation that this is really so. It is therefore an illusion rather than a reality. Everyone will remember the famous story of Trilby, who could sing when under the hypnotic powers of Svengali, but failed miserably otherwise. Unfortunately there does not appear to exist any evidence of such a thing in reality.

Again, everyone must have read of criminals who have tried to escape the consequences of their crimes, and even to shift their punishment on to somebody else, by insisting that they did the crime under hypnosis and that the blame is not really theirs. . It is highly unlikely that this could ever occur, because if a patient is asked to perform a real crime, he usually comes out of the hypnotic state. Janet tells an amusing story about a hypnotised patient who willingly "murdered" people with cardboard daggers and so on. The physician who was demonstrating this then allowed the audience of medical students to suggest things for her to do. One of the students suggested that she was to take off her clothes. At this the patient "woke up," and left in a fury of indignation. There is one possibility that hypnosis could be used to commit a crime by tricking the patient. For instance, if a patient was told that a loaded revolver was empty and that he was to pretend to shoot someone, he might be tricked into doing it. Delbeuf had a patient who really had defended herself from a burglar by means of a revolver, and he secretly emptied the revolver, hypnotised the patient, and told her that two men in the next room were robbers. The patient refused to even point it at them. Although she was quite willing to shoot a real burglar, she would take no risks with imaginary ones.

The problem of whether it was possible to thus trick a person who had been hypnotised into committing a murder was once expounded by Wagner-Jauregg in a lecture in Vienna. His lecture was attended by a barber's assistant who was an enthusiastic hypnotist. This man hypnotised a girl and gave her a revolver loaded with a blank cartridge. He assured her that the revolver was harmless, and instructed her to go and point it at Wagner-Jauregg and fire it. She went to his room and raised the revolver, but dropped her hand without having fired it. There is, unfortunately, some doubt as to whether she pressed the trigger, but in any case the shot was not fired. It will be seen, then, that

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it is unlikely that even by trickery one could persuade hypnotised persons to commit a crime.

There is a popular belief that animals can be hypnotised by staring at them. In fact, one of the earlier mesmerists insisted that he succeeded in hypnotising a lion at the Zoo. Now, it is true that one can produce curious phenomena in animals. For example, if one places a chicken on a table and hold its beak close to the surface of the table and draws a chalk line away from its beak, it will be found that the chicken will remain quietly on the table. Similarly some animals when turned over on their backs will remain in the position in which they have been placed without moving. It is very improbable that such things as these are real examples of hypnosis. It is much more probable that the animal phenomena are due to fear causing the animal to mimic death, and this will be referred to under the section on Pavlov.

It has often been suggested that such tricks as the "Indian Rope Trick" could be explained by "mass hypnosis." There does not seem to be any reference to the subject of mass hypnosis in the literature, so it is impossible to know how it can be done—if indeed it is possible. Nevertheless that such a state can exist must be admitted from the fact that a number of people have hallucinated at the same time, and such occurrences as the "Angels at Mons"—if indeed they are true—could only be explained by this means. The necessary conditions appear to be an intense desire to see the hallucination and an expectation that it will occur.

It has been, in this chapter, the intention deliberately to avoid the discussion of theories of hypnosis, and these will be examined in subsequent chapters.

To summarise, we may conclude that hypnosis is a subjective condition. It is not brought about by any magic power or strength of will to be found in the hypnotist, but is rather a psychical condition producible in the subject.

CHAPTER TWO

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WE have seen in the previous chapter how the mesmerists, beginning with Mesmer himself, slowly accumulated and tested the facts of hypnosis, and how, after a long battle fought every step of the way, these facts were at last accepted as valid and the reality of hypnosis proved for ever. This stage we may consider as Stage One of the three stages which constitute scientific investigation—it is the stage of the accumulation of facts. Stage Two is the stage of the examination of those facts. It is this stage which is characterised by the work of Pierre Janet and Morton Prince. Stage Three—that of the deduction of laws and the prediction of events from those laws—is characterised by Sigmund Freud, whom we shall consider later.

It is not easy to discover a great deal about the life of Pierre Janet. It is said that a happy country has no history, and Janet appears to have started life with considerable advantages regarding his future career. He was born in 1859. His father's brother, Paul Janet, was a philosopher, who occupied a Chair at the Sorbonne. As a young man Janet was interested in botany, and he formed a large collection of dried plants, but he was also very religious, and possibly these two interests had a considerable influence on his later work, the botany making him methodical and careful in his methods, and the religion turning his interest towards the things of the mind.

Janet must have been a brilliant student as a young man, since he was elected to teach philosophy at the Lycée at Havre at the age of twenty-two years. One can imagine this young teacher, full of energy and eager to prove his merit, looking round for some subject to work upon. Determined to explore unbeaten paths, he commenced to study hallucinations and perception. He asked his medical colleagues to tell him of suitable cases. One of them, Doctor Gilbert, suggested that he might be interested in a patient

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who had been hypnotised by Dupotet and who had been supposed to have exhibited clairvoyance and hypnotism at a distance. As Janet says, "What a godsend for a young psychologist, twenty-two years of age, curious as to all psychological phenomena and drawn to the mysterious side of these occult faculties!"

Gilbert and Janet experimented on this girl, and their experiments seemed to show the possibility of hypnotising her from a distance. The experiments were not at all conclusive, but they brought the experimenters into contact with Richet and Charcot, who had just founded a society for the study of such occurrences. Janet was of the opinion that his experiments were spoiled by the indiscreet talk of his assistants, and says that this was a valuable lesson to him. Never after these experiments did he allow himself to work without taking copious notes.

He was thus brought into contact with the most eminent psychologists in France, and his attention was directed by them towards hysteria. He worked on hysteria first at Havre and later at Salpêtrière, where Charcot was able to arrange that he had charge of a psychological laboratory.

Now, when it is said that Janet studied "hysteria," it must not be imagined that we are discussing the noisy weeping, alternating with laughter, known to the laity as "hysterics." It was the disease hysteria which Mesmer found so treatable by means of his magnets.

Hysteria displays such a bewildering variety of symptoms that for a long time physicians believed that they were dealing with a number of different diseases. The first characteristic we must notice about it is that it is a purely psychological disease. Neurologists, from Charcot until the present day, have searched to find a damaged spot in the brain to account for its causation; they have invariably failed and often, like Charcot, ended by appearing foolish. A physiologist once stated that he thought that the frog had been created especially for the purpose of physiological experimentation. If this is so, then the hysteric must have been produced for psychological experiments.

Hysteria has been for a long time—and is even at the present day—a bugbear to physicians. Sydenham called it "the proteus that cannot be laid hold of," and, indeed, that is a very good description. A patient may come one day complaining of hoarse-

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ness, the next of vomiting, the next of headache and so on. It will be remembered that one of Mesmer's patients complained of convulsions, vomiting attacks, diarrhœa, urinary difficulties, toothache, earache and a host of other symptoms. It is obvious that she was suffering from hysteria.

The hysteric may therefore suffer from symptoms attacking all parts of the body. The motor system may be attacked, and the patient suffer either from paralysis or else a contracture of a muscle. The sensory system may be a victim, and the complaint be either of a loss of sensation—anæsthesia—or else any sensation from tingling to the most acute burning sensation. The respiration may be affected or the bowels may be the point attacked. Special senses may be upset and various kinds of deafness or blindness may result. Speech may be affected, and we must remember that stammering is only a localised form of hysteria. Convulsive attacks which greatly resemble epilepsy may occur and, more curious still, the patient may lose his memory and be found many miles away from his home. The cases of which we read in the newspapers or for which we hear an S.O.S. on the wireless are probably suffering from an hysterical loss of memory or have, whilst in this condition, disappeared and have made a journey which is called technically a "fugue." Those curious cases of double personality, which we shall study in a later chapter, are really cases of hysteria. It will be seen that we have gone a long way from the popular view that hysteria is the same as "hysterics"!

But how to explain such an illness? This was a problem which the young philosopher of twenty-two years old must have found a hard nut to crack.

Now, Janet had seen certain experiments which Charcot had performed and for which we must forgive Charcot many of his previous errors and foolishness which he showed when he was experimenting with hypnotism.

Charcot had shown again and again that the symptoms of hysterical paralysis could be produced by hypnosis. He had often produced these very symptoms in order to prove his theory that hypnosis and hysteria were but one and the same thing. He would hypnotise a patient and tell her that she would be unable to move her arm until he said that she could. She was paralysed until he told her that her arm was cured. He would then wake the

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patient from her hypnotic trance, and she would find, to her surprise, that her arm was paralysed. However much she tried she could not move it. She was therefore suffering from an hysterical paralysis of that limb. This Charcot did not only with paralysis but also with every other symptom manifested by hysteria.

Janet's first theory was, therefore, that these patients had somehow got the idea into their heads that they were paralysed or had lost their sensation and so on. He thought that they must have got a "fixed idea" in their minds, and that was all from which they were suffering.

One cannot help being struck by the comparison of the hysteric and the hypnotised patient. The only apparent difference is that with the hypnotised patient we know what the idea is which makes the patient feel that she is paralysed, since we ourselves have instilled it into her. With the hysteric we do not know where the idea has come from.

It will be realised that this fixed idea is not really an ordinary simple idea. It is endowed with certain special properties. For example, the patient is not really aware of the nature of the idea in either hypnosis or in hysteria. When the patient previously described was told her wine was salted and tried to drink it she found it actually tasted salty. She had no idea why it tasted in this way, and so concluded that someone must have put salt in it while she was being hypnotised. We have therefore made the strange discovery that the fixed idea is not available to the patient's consciousness, but of course its implications are. The idea that salt had been put in the wine had been "forgotten." Nevertheless when the patient started to drink the wine she noticed that it tasted of salt. The idea that salt had been put in her wine was therefore, according to Janet's theory, a fixed idea. Another point to notice about this fixed idea is that it is really fixed. No amount of reassurance that no one had put anything in the wine would convince the lady. It tasted salt—that was enough for her. The only way to remove the fixed idea was to re-hypnotise her and tell her that the wine no longer had salt in it. If she were then awakened she would agree that it no longer tasted peculiar.

It is obvious that if we can instil a fixed idea contrary to the idea which is already there, then we shall cure the patient exactly as we

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removed the saline taste from the wine by the reassurance that it no longer contained salt. The instillation of an equal and opposite idea therefore sometimes acts as a curative agent. This was the first plausible explanation of the curative effect of hypnosis.

Now, if by means of hypnotism we can produce these mysterious fixed ideas in a patient's mind, perhaps this would explain how the patient became ill in the first place. Have these patients been hypnotised at some time or other and the fixed idea imparted to their minds? Obviously not. Many of these patients have never heard of, or seen, a hypnotist until they come to hospital complaining of their symptoms.

If this is not possible, could it not be that the patient had hypnotised himself or had "auto-suggested" the idea to himself, and so made it a fixed idea?

This last was a much more fruitful suggestion, and indeed would explain the whole matter in a satisfactory manner.

But if this is so, why is it that we do not all get fixed ideas? We are all capable of auto-suggesting things to ourselves. Why is it that there are only a few unfortunates whose ideas get so uncomfortably fixed in this queer way? This was rather a problem for Janet, and he set to work hard studying his patients in order to find the explanation.

He now extended his study to a wider field, and no longer occupied himself entirely with hysterics. In fact he says, "In a large hospital where there are so many different kinds of patients, it was easy to choose, and for several years I devoted my studies to tics, insanity, phobias, obsessions and impulses of all kinds." Now, it is easy to apply Janet's theory of fixed ideas to obsessions, for in that illness the patient is constantly preoccupied with ideas: either that he must do something or avoid doing something—the cracks in the pavement on which we all feel we must tread or avoid treading form a temporary obsession, or, again, most people have had to go back to make sure that they have turned out the gas on some occasion, even though they know quite well that they have done it. Again with phobias—fear of heights, of open spaces, of dirt and so on can obviously be explained by fixed ideas. Some sorts of insanity appear to show that the patient is suffering from a fixed idea, *i.e.* patients who insist that they are kings, and so on. All this was clear to Janet; but why did these people get the fixed idea?

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His careful studies seemed to show him that the fixed ideas became fixed because the patient was suffering from a peculiar state which he called "psychasthenia," or exhaustion of the mind. He says, "My studies at the Salpêtrière showed me more and more the part played by exhaustion of all kinds, organic ailments and hereditary predispositions. I did not want to exaggerate the import of an observation correct in some particular cases."

Janet felt, therefore, that these fixed ideas were there because of what he calls a "preliminary ailing tendency" which was inherited. If someone who had this unfortunate inheritance was subjected to some severe emotional disturbance there was "a subconscious persistence of emotional traumatism." That is to say, the emotional disturbance was able to persist without the patient being aware of it, but this disturbance was able to cause the fixed idea which appeared as a symptom.

Now, whilst studying hysterical somnambulism and the behaviour of patients in hysterical trances, Janet found that the patient was acting in some drama known only to himself. He gives a very interesting example in the case of a young girl named Irene. This girl lived with her mother, who was in the last stages of tuberculosis of the lungs. She nursed her through her last days and watched her dying for two months, toiling away all the time at a sewing-machine in order to earn enough to keep them both alive. At last her mother died, and she did her best to revive the corpse. The body slipped to the floor, and she had to drag it back on to the bed with infinite exertion. Shortly after her mother died she started to have strange attacks of somnambulism. Janet says, "The young girl has the singular habit of acting again all the events that took place at her mother's death, without forgetting the least detail. Sometimes she only speaks, relating all that happened with great volubility, putting questions and answers in turn, or asking questions only, and seeming to listen for the answers; sometimes she only sees the sight, looking with frightened face and staring on the various scenes, and acting according to what she sees. At other times she combines all hallucinations, words and acts and seems to play a very singular drama." So much for Irene's somnambulisms.

Janet, however, studied her during intervals in which she appeared to be normal. He says, "We shall soon notice that even

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at that time she is different from what she was before. Her relatives, when she was conveyed to the hospital, said to us, 'She has grown callous and insensible, she has soon forgotten her mother's death, and does not remember her illness.' That remark seems amazing; it is, however, true that this young girl is unable to tell us what brought about her illness, for the good reason that she has quite forgotten the dramatic event that happened three months ago."

Now Janet asked himself, What has happened? and he came to the brilliant conclusion that somehow or other the series of ideas which related to the mother's death had been isolated from the patient's consciousness. Thus when she was in her normal state of health she knew nothing of what had happened to cause her mother's death. She could know nothing because there was a gap between this idea (and of course ideas associated with it) and her other ideas. He says, "Normally, in good health, the little system (of ideas) must be connected to the large one, and must in great part depend on it. Generally the partial system remains subject to the laws of the total system; it is called up only when the whole consciousness allows it.

"Now, to picture to ourselves what has taken place during somnambulism, we may adopt a simple provisional résumé. Things happen as if an idea, a partial system of thoughts, emancipated itself, became independent and developed itself on its own account. The result is, on one hand, that it develops far too much, and, on the other hand, that consciousness appears no longer to control it."

It is very difficult indeed to realise the enormous advance which such a theory marks. Instead of arguing interminably about the nature of ideas, as we found the older psychologists doing, Janet has adopted the position which we find in other sciences—for instance, chemistry. A chemist does not spend all his time sitting in an armchair arguing about the nature of atoms. Far from it. He is content to study the compounds available to him and to note their reactions. When he knows sufficient about the compounds and their reactions he will be able to deduce much more about the atoms than he could possibly have discovered by idle speculation.

It would not be surprising if Janet's theory should be very

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incredible. How, it will be said, is it possible that a piece of "consciousness" can be split off from the rest of our minds and enjoy an independent existence? That difficulty exists mainly because the reader has some conception of consciousness as a mysterious and unanalysable substance. If, however, we regard consciousness as the sum total of the ideas and emotions at any given moment, it becomes easier to appreciate. It is realised that this is by no means final, and that it is easy to raise a great deal of metaphysical fog to conceal the issue, but we shall be less likely to lose ourselves in obscurity if we hold fast to material and even mechanistic views rather than abandon ourselves to a flood of mysticism.

Let us not be diverted by those who would sidetrack us into endless arguments as to the nature of consciousness, and insist that our definition is a working one good enough for practical people who are trying to understand difficult phenomena. Let us examine further cases to see whether Janet's theories are of any value.

Now, the case quoted from Janet is by no means an isolated one. Janet and others have published dozens of similar cases. Even Shakespeare was well aware of the phenomena, since the case of Lady Macbeth is a very good example of a somnambulist. One cannot be sure, however, that Shakespeare was aware that these subjects have "forgotten" the incident which they enact when they are somnambulistic. These simple somnambulisms Janet calls *monoideic somnambulisms*, in order to distinguish them from another variety which we are about to study. (English and American writers usually call these *monoideic somnambulisms* "hysterical deliria," but to my mind Janet's term is the better.)

We can now understand *polyideic somnambulisms* which show much more elaboration and are of considerably longer duration. Whereas a *monoideic somnambulism* lasts only a short time, a fugue may last months or even years. Moreover, the whole behaviour of the patient is altered during this time. Perhaps an example taken from the writer's own practice will make the nature of these *polyideic somnambulisms* appreciated better than a mere description.

Some years ago he had a patient who was an engineer employed by a firm which frequently sent its goods to the South of

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France. This man was a good worker and had been employed by his firm for about fifteen years. Unfortunately there was some trouble at the works, and he was discharged. He was terribly upset at losing his work, but succeeded in getting work to do on his own, so his discharge did not entail much financial loss. At the same time a friend who was being sued for a motor accident asked the patient to take charge of a large sum of money for him until the case was over. For some weeks after he had lost his work the patient was upset and sat up brooding during half the night. One day his wife came to me in great distress. Her husband had disappeared, and she was fearful that he had gone away with another woman and taken the money entrusted to him. I suggested to the wife that he might have had a loss of memory and that the best thing to do was to wait for a few days and see if he returned. Sure enough in a few days a letter came from the Mediterranean coast saying that her husband was returning home. He had suddenly "wakened up" in a café and, as he seemed bewildered, the kindly café proprietor had taken care of him. This café keeper had very cleverly diagnosed my patient as "sick in the head," and when he seemed well enough to travel he was put on the train, and eventually appeared at Victoria. Now, of course, the sceptics will say he went away to have a gay time with the money which did not belong to him and having spent all his own and the stolen money returned with the splendid excuse that he had lost his memory. One might suspect this *if he had spent the money*. But no, apart from the cost of his fare and a small sum for his board and lodgings (he must have stayed at very cheap hotels and travelled third class, judging by the amount he had spent), he had every penny of the money with which he had started out. He had no knowledge whatsoever of his journey, except that on the day when he started he was walking down a certain street. After that his mind was a blank until he "woke up" in the French café.

It is impossible that some part of the patient's mind was not at work during his journey to France. He must have purchased his ticket at Victoria, have shown his passport at Calais and so on. Yet this part of the mind was not connected with the "normal" part, so that it was impossible for him to remember anything whilst in his "normal" state.

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Janet enunciated what he calls the "laws" of fugues. These are firstly that "during the abnormal state there is a certain idea, a certain system of thoughts that develops to an exaggerated degree." By this he means the strong desire of the patient to go somewhere where he has been happy or to escape from an environment where he has been unhappy. The patient just described had this intense desire to travel to the South of France because he was unhappy without his work in England and he had often been sent by his firm, when he was in their employ, to do work in the South of France, and he had been very happy there. The second "law" is that during the fugue the patient's ordinary thoughts of his daily life and so on are not available to him. It is only by chance that something which occurs brings back the thoughts associated with everyday life, and then the thoughts associated with the fugue are lost and the patient wakes up to his own personality. The third "law" is that the memories of the occurrences during the fugue state are not available to the patient during his ordinary life.

You will observe the similarity of these fugues to the somnambulisms which have been previously described. They are exactly similar, except that they are more elaborate and of longer duration and, more important still, the patient is not acting a little drama all on his own. He is living a new part of his life. He is not hallucinating a scene, as Irene did when she dragged her imaginary dead mother back on to the bed. What he is doing is living a new life in the outside world; but the important point of similarity is that in the case of fugues, as well as of somnambulisms, the abnormal behaviour, together with its memories and emotions, is separate and inaccessible to the patient when he is in his normal state. Now, it was discovered that it was not possible to induce these states—somnambulisms and fugues,—by means of hypnotism. It is still of value to use this means of unearthing the amnesia of a fugue or a somnambulism, and this is often used in medicine to-day. In fact Janet was of the opinion that hypnosis is nothing but an artificially induced hysterical somnambulism.

He used the following arguments to prove this point. "Firstly," he said, "consider in itself, the hypnotic state has never any character which cannot be found in natural hysteric somnambulisms. Secondly, if you examine the subjects with whom

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this state can be obtained, you will be convinced that they are mostly hysteric patients, having already had somnambulism in some form or other, or for the remaining part hysteric patients having presented other accidents, but having the mental state characteristic of hysteria. Thirdly . . . subjects troubled with other diseases than hysteria—epileptics, for instance, neurasthenics tormented by mania or doubt . . .—are not hypnotisable. And, fourthly, a subject whose hysteria decreases, who tends towards recovery, whose mental state changes, ceases to be hypnotisable.”

Hysteria, then, for Janet is a spontaneous splitting of the mind into two parts. Hypnosis is an artificial splitting of the mind. You will notice that we have progressed considerably from the simple theory of a fixed idea being the cause of these two conditions.

Now, Janet, having started at what appears at first sight to be the most complicated symptoms, commenced to work back to what appear to be simpler ones. He noticed that patients who had such simple symptoms as the twitching of one arm or loss of sensation in one limb could sometimes be hypnotised and a lost memory recovered, which explained the reason why the patient had chosen this particular symptom. For instance, from one who suffered from rhythmical movements of her right hand and foot he was able to recover the following strange story. “One evening, on the eve of quarter day, she had heard her parents, who were poor workpeople, bewailing their poverty and the difficulty they had in paying their landlord. She was very much moved, and from that time she had at night a kind of somnambulism, during which she tumbled and tossed in her bed and repeated aloud, ‘I must work, I must work.’ Now, what was this girl’s work? She had a singular trade, which was to make dolls’ eyes, and for this purpose she worked a lathe by treading a pedal with her foot and turning a flywheel with her right hand. When she awoke she had forgotten about her somnambulism, but the movement remained, and she was unable to stop it.”

Now, this again is a great advance. We find that the most queer symptoms *have a meaning*. The symptoms are actuated by the little piece of consciousness which has been separated from the main body of consciousness, and it is this little isolated fragment of consciousness which determines the symptoms and explains what the meaning really is. Here we have no fugue or som-

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nambulism which determines the patient's whole life, but a tiny piece of play-acting which affects a limb or a part of a limb. This little piece of play-acting has been forgotten and is not available to the patient's consciousness. That is to say, it has become subconscious. Well might Charcot quote Shakespeare when he examined his hysterical patients, and repeat with Polonius, "Though this be madness, yet there's method in it."

Janet examined a multitude of patients and was, in a large number, able to explain the symptoms which caused them to suffer. He did in this way lay the foundations for the work of Freud, who was to follow and throw so much more light on these problems. Janet, however, did not construct a dynamic theory to explain these symptoms. He was still obsessed with the theory of the fixed idea, and was quite satisfied to explain the reason why the whole thing started by his views that the patient had suffered psychological damage through his excessive emotion. His psychology therefore was a more or less descriptive one, but we must admit that his descriptions are valuable and that he did a great deal to encourage the psycho-pathological conception of the neuroses.

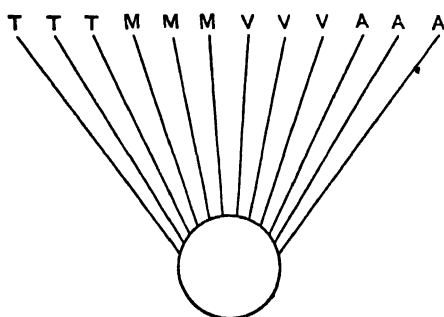
Janet's conception of a piece of consciousness being split off from the main bulk was a very valuable one. It has entered into medicine, and is called technically "dissociation." He believed that a certain mental tension was necessary for the normal reaction of the mind. If that tension was reduced, there was a tendency for consciousness to retract, and he explains this in the following ingenious manner. He used the suggestion of the great physiologist, Herzen, that consciousness resembles a great hall full of innumerable small electric lamps. When one is illuminated it signifies a sensation of touch; when another appears it means a sensation of pain, another of vision and so on. Now, the electric lamps must be thought of as being present in an enormous number, since we can localise our sensations to an incredible extent.

Complete consciousness is represented by the fact that "I" see or feel or taste or whatever it may be. What is this "I" that sees or feels or tastes? Now, according to Janet, this "I" or ego represents the conception of the whole integrated personality. He says, "The question here is the idea of personality, of my whole

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person ; it is the union of present sensations different from the little sensation considered, from all past impressions, from the imagination of all future phenomena. It is the notion of my body, of my capacities, of my name, of my social position, of the part I play in the world ; it is an ensemble of moral, political, religious thoughts. It is a world of ideas, the most considerable, perhaps, that we can ever know, for we are far from having made the tour of the domain of the personality." He points out that in feeling a new sensation there are two factors. Firstly, the tiny new sensation which has been produced and the enormous mass of past

NORMAL FIELD OF CONSCIOUSNESS
After Janet (" The Major Symptoms of Hysteria ")



T = Tactile sensations
M = Muscle sensations
V = Visual sensations
A = Auditory sensations

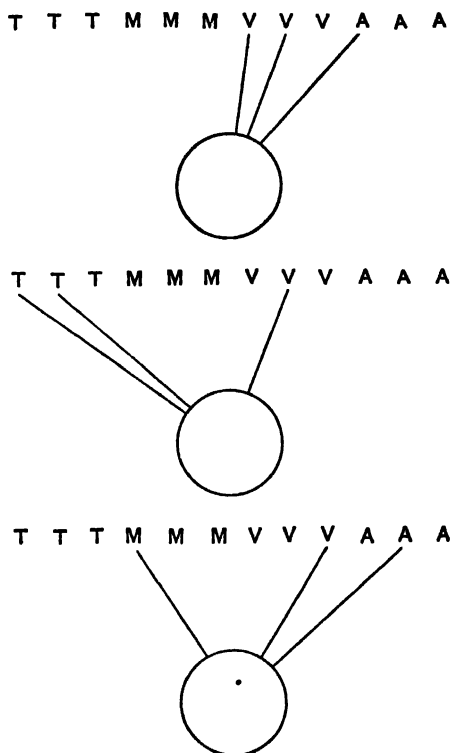
Note.—The normal field of consciousness includes a multitude of diverse sensations.

sensations which have been integrated into the ego, the "I." This little new sensation has to be absorbed and assessed by the conglomeration of sensations which have been fused to form the ego. Then it is possible to say that the new sensation has been appreciated. It is realised that this is a very difficult thing to conceive because we have been taught that the "ego" or "I" is a unity—a kind of atom which cannot be split into pieces. Instead of this, you are asked to conceive of something which looks like a unity but which is really built up from thousands of particles. Now, no normal mind is capable of absorbing and assessing all the millions of sensations which crowd in upon it

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from the uncountable sense-organs of the skin, from the special senses, from the muscles, intestines and so on. The amount which we can absorb and assess is called the field of consciousness. Janet points out that this field of consciousness varies a great deal, depending on the state of mind of the individual. He explains

SCHEME OF FIELD OF CONSCIOUSNESS IN ABSENT-MINDEDNESS
(After Janet)



Note.—In Absent-mindedness one attends to only a few sensations, the rest are excluded from the mind.

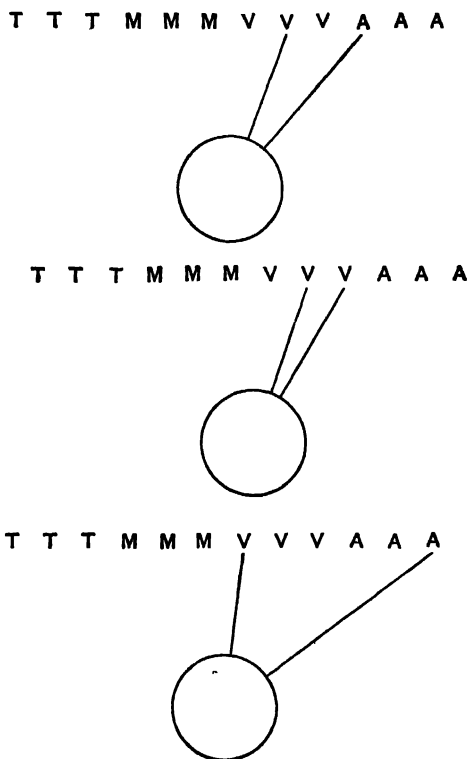
that an orchestral conductor, for instance, who is hearing all the instruments and at the same time reading the score and conducting an opera, must unite in his state of consciousness an immense number of facts. On the contrary, when one is asleep and dreaming, or in the case of a patient who is suffering from a somnambulism, then there are comparatively few facts occupy-

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ing the field of consciousness—that is to say, the field has been narrowed.

Janet regards hysteria as merely an exaggerated absent-mindedness. The person who suffers from absent-mindedness has allowed his consciousness to narrow so that he neglects to observe

FIELD OF CONSCIOUSNESS IN HYSTERICAL AMNESIA (After Janet)



Note.—Very few sensations penetrate consciousness. Most are excluded. In this case no muscular or tactile sensations are felt.

facts which should really be observed. For instance, when crossing the road, this person is, perhaps, merely thinking of the young lady whom he is to take out to a dance in the evening. He has narrowed his field of consciousness so that ideas of the young lady occupy practically the whole of it. It is quite possible,

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therefore, that if our subject neglects to include in his field of consciousness the motor-car which is approaching him at a great speed he will find himself in hospital.

But to return to hysteria. The hysteric has narrowed his field of consciousness so that it does not include, for instance, the sensation on one side of the body. Consciousness has narrowed and left outside the sensation of the side of the body affected. The patient can no longer appreciate the sensation because he excludes it from the junction with the main mass of sensations with which it has to mingle to be felt.

Janet defines hysteria as a "malady of the personal synthesis." He says, "Hysteria is a form of mental depression characterised by the retraction of the field of personal consciousness and a tendency to the dissociation and emancipation of the systems of ideas and functions that constitute personality." We see that Janet's theories are purely descriptive. He says, in effect, if you have not sufficient tension to hold your mind together or to expand your consciousness to its full extent, then either your consciousness will contract, or it will fragment and you will present nervous symptoms caused by the dissociated fragment or to the part of consciousness left outside the contraction of the main bulk. "But," you say to him, "I don't want my consciousness to behave in such an unfortunate way. How can I prevent it?" He will answer, "You must be born in a family where there is no weak mental tension, you must avoid physical and nervous exhaustion, and then you will be safe."

It will be appreciated that Janet's theory of the narrowing of the field of consciousness is not greatly different from the idea of a piece of consciousness being split off the main bulk. It is, however, a very convenient theory for explaining those hysterical symptoms in which there is no apparent tendency to this splitting or dissociation.

Janet's psychology was too deeply rooted in the theory that there was some fundamental weakness of the mind due either to inheritance or to damage produced by emotion for it ever to develop in the way which we shall see the psychological theories of Freud developed. His theories greatly appealed to neurologists, and indeed still do.

He explained the other neuroses by a theory of psycho-physio-

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logical insufficiency. These neuroses are obsessions, compulsions, phobias and fears. The nervous insufficiency from which these patients were supposed to suffer is, according to Janet, typified by those patients who suffer from neurasthenia. These patients complain of exhaustion and appear at first sight to demonstrate his principles. Nevertheless, such a lowering of the mental level as Janet postulates was never proved satisfactorily, and probably does not exist. He insisted that the absence of attention, the lack of feeling and will, and the depression which so often accompanies these neuroses were proof that the mental level was lowered. We shall see, when we study other views, that these symptoms can be explained in different ways.

The theory of the lowering of the mental level to explain these nervous illnesses is the most unsatisfactory of Janet's work. Why should a low level of mental energy make a patient feel that it was necessary to go back ten times to see that he had turned off the gas? One might reasonably expect that the patient, feeling that his mental energy was exhausted, should try to conserve it. Even supposing that it is the cause, why should a patient choose one particular symptom and not some other? Although Janet described hundreds of cases in his two large volumes on "Obsessions and Psychasthenia," one cannot feel convinced that he has correctly explained a single one of them. When we examine his theories of hypnosis we are struck at once by the correctness of his compositions. No matter how much you may argue, the hysteric *has* a gap in his consciousness, and this is obviously the cause of the symptoms. The patient who suffers from obsessions or phobias quite obviously *has not* any depression of his mental level. For instance, the writer has treated an analytical chemist who had to do very difficult and intricate work. He was suffering from one of this group of neuroses. In spite of this he managed to do his work. What had happened to this man's mental level? Was it depressed for his symptom and not for his work? No. It is unfortunate, but we must abandon this theory of Janet's as unsatisfactory.

We may follow the development of the theory of the splitting or dissociation of the mind further, although it was not developed any further by Janet himself. It was elaborated by the great Swiss psychiatrist, Bleüler. Now, Bleüler was in charge of a large

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mental hospital, and was in intimate contact with insane patients. He noticed that his patients did in some ways resemble those hysterical patients that Janet had studied so carefully, except that they had developed their fantasies to a greater extent. Whereas Janet's patients had their hysterical somnambulism and acted the little drama which had been detached from their usual consciousness, the patients whom Bleüler studied continued to act their little dramas. Sometimes they seemed to be acting a multitude of dramas. But what had happened to the main bulk of their consciousness? It seemed that the little isolated piece of consciousness had usurped the throne of the main bulk of consciousness. The patient was doomed to continue acting her drama. Sometimes, indeed, the main consciousness managed to regain its superiority, and then she became well. More often the drama continued until the patient became hopelessly demented. Bleüler said that what was happening was not that there was one little piece of consciousness dissociated from the main bulk, but *the whole consciousness was becoming split up and disintegrating*.

The importance of this conception cannot be overstressed. No one before had ever produced a satisfactory explanation for the type of insanity which Bleüler was beginning to explain. The explanation was such a satisfactory one, although it was so novel, that it soon won supporters. It explained so much that had previously been a complete puzzle. For example, a mental hospital patient who believed that he was the supreme King of Kings, the Omnipotent, the Omniscient, the Power of the Universe, One who can blast the world at will and so on, once came up to me and said, "I want to go home. When will you let me go home?" Now, it is only possible that one who thought that he was all-powerful could demand to be let go home if the two ideas of being all-powerful and of being confined, against his will were isolated. Otherwise he would have realised at once that all he had to do was to exercise his almighty power and he could go home when he pleased.

Again, it was found that patients who seemed to be unconscious of the world around them were really living through some drama of their own elaboration. For example, the writer once had a young girl under his care who paid no attention to things about her. She refused to do any work, would not wash, destroyed her

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clothes and seemed always to be in a dream. After eighteen months she recovered and led a normal life. It was not difficult to win her confidence, and after some time she told the following tale. Although she had never had a lover, she felt that she was going to have a child. Her illness was a dramatisation of her pregnancy. This girl's illness resembles in a striking way the somnambulisms which so fascinated Janet. The only difference is that this girl's illness was of much longer duration, and that it pervaded her whole life and affected her conduct. The splitting or dissociation had progressed much more deeply and the mind is much more disintegrated. The splitting of the mind is much less clear-cut than in hysteria, and instead of acting the drama and finishing it, the patient described has tried to live both her ordinary life and her dream life all in one. When this illness progresses to its furthest extent it produces a strange condition in which the patient, if she has been trained, will work automatically at a simple task, or, if she has been allowed to deteriorate, will have to be clothed and supervised while she spends her time aimlessly, without interest and with no social contact. Her consciousness has been fragmented. Rarely will such a patient depart from her automatic existence and enact a little drama or behave in some manner which suggests that there are still larger fragments of her consciousness which are large enough to control her behaviour. Needless to say, not all patients deteriorate to this extent.

If we add Bleüler's views to those of Janet, we can conclude that consciousness can be divided either by a gross fissure to produce a fugue or an hysterical somnambulism, or else it can be shattered into a multitude of small fragments each of which is separated from the other. It will be realised, if one accepts these views, that we have travelled, an enormous distance from the conception of consciousness as a unity. Yet this view is much more in accordance with a biological conception of life than consciousness as a mysterious substance which pervades the universe in a strange ethereal manner, which is what some mystics would have us believe. We shall see that all the work which has been performed on consciousness since Janet supports the views expressed here.

Now, it will be appreciated that although these speculations regarding the nature of consciousness are very fascinating, yet

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they are useless unless they lead somewhere. 'The medical psychologist is a strict utilitarian. "Do these theories which you have propounded help me treat my patients?" he asks. "Exactly how have Janet's theories helped psychotherapy to advance?"

Although we may admire Janet's theories, we cannot help feeling the poverty of his equipment as far as the healing art is concerned. He regards an hysterical patient as having a dissociation or gap in his mind because it has not the cohesion or psychological tension to hold it together. But how can we increase the psychological tension or close the gap? He found it hard to build up a coherent system of psychotherapy on his theories. His two large volumes on the subject of psychological healing are, when he is not borrowing from other people, a hotch-potch of the views which had been held previously.

There are really two possibilities of treatment based upon Janet's views. Firstly to close the gap in the patient's consciousness. This Janet treated mainly by suggestion. If a patient's paralysed limb could be made to move—that is to say, if the little piece of consciousness which controls the limb can be joined to the main bulk of consciousness once again—then a cure would be produced. The trouble was that again and again the isolated piece of consciousness would separate from the main mass, and although a temporary cure could be brought about by suggestion, it could not be made permanent—the tendency to dissociate was too strong. In order to overcome this, Janet had recourse to an attempt to build up the mental tension. This he attempted to do by rest, isolation from exciting influences and the simplification of the patient's life. This was supposed to allow the patient to re-accumulate a fresh supply of energy.

Janet borrowed considerably from Freud, and I have deliberately neglected to describe the part of his treatment which appears to have a Freudian origin, since we shall consider it in the section on Freud and his work.

It would be unfair to him not to admit that his treatment, based as it probably is upon a wrong foundation, is frequently efficacious. There are still many neurologists and even psychiatrists who have refused to accept the views of those who have succeeded Janet, and in one of the largest hospitals in London the patients are treated more or less on his principles. This does not, of course,

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prove that his views are correct, but only that they are still acceptable.

Janet was destined to foreshadow Freud and to prepare the path for him. He never produced a coherent psychological system, and his theories are really static. One gets the impression from his work that he believes that under some circumstances the human mind falls to pieces without much to cause it to do so. In spite of this we must realise that his theory of dissociation of consciousness is very original, and has been of great value in the evolution of modern psychology. For this view alone he deserves to be remembered and honoured.

CHAPTER THREE

MORTON PRINCE AND MULTIPLE PERSONALITY

IN 1886 Robert Louis Stevenson published his story called "Dr. Jekyll and Mr. Hyde," and the strangeness of its theme instantly aroused a universal interest. It caused a shiver of horror to run round the world. The idea that the personality might be composed of two entities—one good and the other bad—was not really anything new. It could be found in the religious teaching of most nations. The suggestion that there might be a drug which would enable the "good" personality to be separated from the "bad," so that sometimes the evil one was predominant and sometimes the kindly one ruled, was a new and, to most people, a horrible idea. So much excitement did the story cause that sermons were preached about it, and the more timid of the Victorians fervently hoped that the doctors who at that time seemed to be discovering everything would not unearth the mysterious drug which Stevenson made Dr. Jekyll use to free the unpleasant Mr. Hyde.

They need have had no such fear. The possibility of a personality breaking into two separate personalities was already known to medical science. In 1816 two doctors had reported a case, and in 1831 MacNish published a case which was carefully observed and recorded. A well-educated girl was one day, without any apparent reason and with no warning, seized with a deep sleep which lasted longer than her sleep usually lasted. When eventually she did awaken she discovered that she had forgotten all that she formerly knew. Her mind was a blank. She had to start again learning the names of things: foods, cups and saucers, clothes—everything, but she worked hard and learned quickly. She had, of course, to learn to read and write again, and it is noticeable that her writing was quite different—thicker and clumsier—than when she wrote previously. Just when this young lady has educated herself nicely, what should happen but that the whole sequence of events

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takes place again. She again slept deeply and far longer than usual. When she awoke, instead of her mind being a blank again—that would have been too terrible a misfortune—she was back at the period before her first sleep and remembered absolutely nothing of the intervening period. She continued to have these strange alternations for four years, and never succeeded in knowing while she was in one state what had happened or what she had learned while in the other state, any more than one can know what another person has learned without asking him. Her mind was therefore completely divided into two separate, water-tight personalities.

A somewhat similar case was described by Weir Mitchell. The patient was another young girl. She was eighteen years old when she started to have fainting spells followed by prolonged attacks of deafness and blindness. After the second attack she woke to find that she had lost her memory. She, too, was compelled to learn everything again, but does not seem to have had much trouble, for she could write, speak, and read quite well after some weeks. She insisted on writing from right to left whilst in this state, but was gay and happy and did not care for anyone. She did just what she liked and wandered freely about in the woods. After ten weeks she had another sleep and again woke up, this time assuming her previous personality, and was timid and depressed. A few weeks later the same thing happened again, and she woke up to her gay and carefree state after a long sleep, remembering what had happened when she was previously in her gay period, but not what had happened in the intervening time. Finally when she was thirty-six years old she tended to remain in her gayer period, and continued cheerful and happy until her death.

A famous French physician, Azam, recorded the case of Férida, a young lady who had suffered from various hysterical illnesses since the age of puberty. She had had vomiting attacks, involuntary movements and so on, and had become timid and depressed. One day she had a "fainting attack" which lasted a short time, and when she awoke was noted to show a different personality. She did not have to learn anything new, however, because when she was in this personality *she knew everything which had happened in the previous personality*. After some hours she had another "fainting attack," and then awoke in her former person-

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ality. There was no memory of what had happened while she had been in her second personality. Whilst in her second personality she was happy and excited, but as soon as she slipped back into her first personality she was again timid, miserable and unhappy. She continued in this way. It is a very remarkable thing that once when in her happy personality she gave herself to her lover and became pregnant. She was very distressed when she started to show symptoms of this pregnancy during the domination of her miserable personality, since she could not realise what had happened to her—because, of course, she had no memory of the happening with her lover. Her doctor hesitated to tell her what had happened. But he was saved the trouble. Her second or gay personality appeared again, and she came to the doctor and apologised, explaining that now, of course, she remembered what had happened, and knew what was wrong with her ! As she grew older the second personality encroached more and more on the first, so that she, too, remained happy and cheerful, and her sad personality almost disappeared. She never knew what had happened in her happy states while she was in an unhappy state, and when this personality became dominant she was ignorant of a large part of her life.

Another French case was that of Louis Vivet, who appeared to have at least six different personalities ; but the most famous case is that recorded by the American doctor, Morton Prince. Prince was a Boston physician who had approached psychology through his interest in neurology. He was educated at Harvard, and later became a professor at Tuft's College Medical School. He was fascinated by psychology, and eventually founded the *Journal of Abnormal Psychology* (which is still extant and a medical journal of high repute).

Morton Prince studied a remarkable case of multiple personality in a young girl for over seven years. He published his observations in a volume which he called "The Dissociation of a Personality."

This girl, whom he calls Beauchamp, was studied more closely than any case of multiple personality had ever been previously or since. She was a hospital nurse who had broken down owing to the strain of nursing. This woman developed three different personalities, who display, according to Prince, the characters of

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"the Saint," "the Woman" and "the Devil." The first—"the Saint"—he says personifies "those traits which expounders of the various religions, whether Christian, Buddhist, Shinto or Confucian, have held up as the ideals to be attained by human nature. To her mind selfishness, impatience, rudeness, uncharitableness, a failure to tell the truth or a suppression of half the truth were literally sins, and their manifestation wickedness, to be cast out by fasting, vigils and prayer.

"Another personality is the Woman personifying the frailties of temper, self-concentration, ambition and self-interest, which ordinarily are the dominating factors of the average human being. Her idea in life is to accomplish her own ends regardless of the consequences to others and the means employed."

The third personality Prince called "the Devil." "Not an immoral devil, to be sure, but rather a mischievous imp, one of that kind which we might imagine would take a pleasure in thwarting the aspirations of humanity."

The "usual" personality was that of an ailing, miserable girl. This personality Prince called B. 1. The personality which appeared under hypnosis, a less inhibited one than B. 1, he called B. 2.

Thus we have "the Saint" (B. 1) and "the hypnotised Saint" (B. 2), who is a somewhat freer person. Then the Woman, called by Sally "the Idiot" (who is B. 4), and "the Devil" (called B. 3 by Prince) who named herself "Sally."

The appearance of Sally was a surprise to Prince, who was treating Miss Beauchamp by hypnosis. He knew, of course, her ordinary personality ("the Saint") and her hypnotic personality (B. 2).

He was, however, very surprised one day to hear her when she was hypnotised speak of herself as "she." Formerly when referring to herself she had always said "I." He also noticed that her manner and bearing were different from what they had been when previously under hypnosis.

Believing that multiple personalities were always produced by the "education" of the patient by the experimenter, Prince tried to shout her down. He says, "I hastened to follow up the lead offered and asked, as if in ignorance, who 'she' was: The hypnotic self was unable to give a satisfactory reply. 'You are

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"she," I said. 'No, I am not.' 'I say you are.' Again a denial." He tried to argue with her, to no avail. Finally he asked her, "Why are you not 'she'?" "Because 'she' does not know the same things that I do." "But you have the same arms and legs, haven't you?" "Yes, but arms and legs do not make us the same." "Well, if you are different persons, what are your names?" The patient could not explain this and answered evasively. A few days later Prince hypnotised her again. "Who are you?" he asked. "I am Miss Beauchamp." "Listen. Now you say you are Miss Beauchamp?" "Yes." "Then why did you say you were not Miss Beauchamp?" Surprised, "Why, I never said so." "The last time we talked you said you were not Miss Beauchamp." "You are mistaken. I did not. I said nothing of the sort." "Yes, you did." "No."

You will observe that this personality had grown spontaneously, and that, far from educating the patient to develop a secondary personality, Prince did his best to suppress it.

Needless to say, this curious division into various personalities caused many amusing and curious incidents. One very interesting one occurred when the mischievous Sally was dominant. She said that she could smell a cigarette which Dr. Prince had smoked before she came into the room. He asked if she would care to have one, and she accepted eagerly. Now, the usual Miss Beauchamp (B. 1) was a very staid person, and never smoked or behaved in other than most prim and proper ways. Miss Beauchamp was quite different from Sally, who smoked the cigarette very clumsily. Sally said, "She is not in the habit of smoking cigarettes. I shall smoke, though."

When the usual Miss Beauchamp returned, and the Sally personality disappeared, she complained that she had a bitter taste in her mouth, but she had no idea why this should be so. At the next interview Prince remarked to Sally, "Wasn't it funny to see Miss Beauchamp when she tasted the tobacco in her mouth and did not know what it was?" Sally laughed and thought it was a great joke. She said, "Yes, she thought that you had put quinine in her mouth, and did not dare ask you." Prince was able to ascertain that this is just what Miss Beauchamp had thought. Morton Prince used to persuade Miss Beauchamp to produce crystal visions by gazing into a glass ball. One day she was

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astonished and horrified by seeing the scene in which she had smoked the cigarette reproduced in the most minute detail. "She saw herself sitting on a sofa—the identical sofa on which she was at that moment seated—smoking cigarettes. . . . It was amusing to watch the expression of astonishment and chagrin with which she beheld herself in this Bohemian act. She indignantly repudiated the fact, declared that it was not true, and that she had never smoked a cigarette in her life. The childish expression on her face in this vision (Sally's face) which she characterised as 'foolish' also annoyed her."

One need not stress the fact that such an incident as that which is recorded above is of great interest psychologically. Firstly, it explains from whence the visions seen by crystal-gazers come. These visions are not due to any mysterious power which enables the gazer to tell the future, and so on. They are merely a manifestation of some part of the personality of which the crystal-gazer is unaware. Secondly, it shows that some part of the personality which is unknown to the patient can influence the behaviour.

That the Sally personality was able to influence Miss Beauchamp's behaviour is shown clearly by the fact that Miss Beauchamp started to have compulsions to tell the most extraordinary lies. She said that a certain lady was a great admirer of Swinburne and had named her baby Algernon Swinburne. This baby was boneless, and was kept alive on a diet of oatmeal and so on. This was wholly untrue, and although poor Miss Beauchamp knew that what she was saying was untrue, the compulsion was too strong for her. She *had* to tell the lies.

Now, this should be of great psychological interest to us. Here again, as Janet found, we have an isolated part of the mind, of which the patient is quite unaware, influencing the behaviour.

Here is a pretty pickle for our jurists. We are told that the responsibility for a crime depends on the appreciation of right and wrong. If we know that what we are doing is wrong, it is a crime. Poor Miss Beauchamp knew that her slanders were wrong. She had no power to stop her tongue, which, given a volition of its own, 'chattered away against her will. Is she guilty or innocent? Here indeed we need a Daniel to come to judgment.

Another example which shows the extraordinary splitting of this patient's mind is that one day the Sally personality informed

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Dr. Prince that Miss Beauchamp had destroyed some money in mistake for a letter. When she resumed her ordinary personality Dr. Prince asked her what she had done with her letter. She replied that she had torn it up. He asked her to look in her pocket. She did so and produced the letter. She was very surprised at finding the letter, instead of her money, which was in bank-notes, and insisted that she must have left the money at home. Morton Prince insisted that she must have destroyed the money, but she refused to believe that this was possible. She was asked to do some more crystal-gazing, and then had another vision in which she saw herself take out the money in mistake for the letter and tear it up.

The "Sally personality" had a considerably wider knowledge of Miss Beauchamp than she did herself. For example, Miss Beauchamp had a crystal vision of herself ill in bed, and then saw herself climb out on the window-sill. It was late at night. She threw an ink-pot, which she had taken up in the room, out of the window. Then she returned to bed. A friend who was nursing her came into the room and put a poultice on her chest. When her friend went out Miss Beauchamp got up and hid it in a corner. The whole of this crystal vision was a puzzle to Miss Beauchamp. She recognised the room as one which she had once occupied when she was ill, and recognised her friend as having looked after her during her illness, but denied she had ever climbed out on to the window-sill, nor could she explain throwing the ink-pot out of the window.

Sally had no difficulty in explaining the whole matter. "She" (Miss Beauchamp) was suffering from pneumonia and was delirious at the time. She imagined she was on the seashore and was walking up and down the sand. When she climbed on to the window-sill she thought that she was climbing on to a rock. She took up a stone (the ink-pot) and threw it into the sea. She thought that she was burying the poultice in the sand when she hid it in the corner.

This observation reveals the cause of the patient's behaviour in delirium, but it is important also because it throws a considerable light on memory. Miss Beauchamp did not remember what she had done in her delirium. In fact, only a crystal vision brought the delirium to light at all. Sally, however, not only

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knows what Miss Beauchamp did, *but why she did it*. It would look as though in this case we are not dealing with a consciousness which has been split (if the term be permitted) perpendicularly, but rather horizontally. We must begin to recognise an unconscious, and this unconscious has been split into a superficial level and a deeper level. Although Prince did not point this out

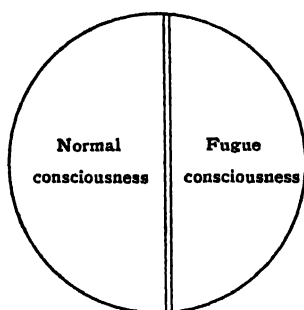


Diagram explaining dissociation upon Janet's principles

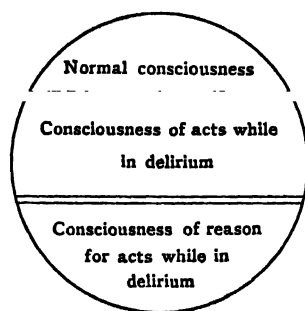


Diagram to show how the dissociation appears to separate deeper levels of consciousness

in his book, it is desirable that we should recognise it, since it will be useful in studying the material of later chapters.

There is often childishness noticeable in these secondary personalities. This is noticeable in the case of double personality described by Weir Mitchell: the young girl who, in one of her personalities, was gay and care-free and ran, unhindered by worries, in the woods. Again in the case of Félida described by Azam the secondary personality was also gay, irresponsible and childish.

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In the case of Louis Vivet it is certain that his six personalities represented various epochs of his life, since he suffered from various hysterical paralyses at different times, and so the ages represented by the personalities can be determined. Each of this boy's personalities therefore represents the group of emotion, memories and so on, developed during each period.

Here, in the case of Sally, we have a fourth case, and we know that, of the personalities exhibited by Miss Beauchamp, Sally is the most childlike. She is irresponsible and fond of doing the forbidden things in which children delight—such as smoking cigarettes. She has no knowledge of French, and cannot spell long words correctly. She stammers at times. This personality which is called Sally is therefore no devil which possessed Miss Beauchamp, but only the split-off memories and emotions of a period of her childhood which, because of their dissociation, have been given a certain amount of self-government, and so can behave in a way as though they composed the whole integrated reactions of the individual.

This dissociated part of the personality of Miss Beauchamp, which we call Sally, gives a valuable lesson on the origin of various symptoms. We have already noted that Sally was capable of influencing Miss Beauchamp and so producing compulsions to do things—for example, tell foolish lies. We may therefore conclude that some people tell lies because they have an inner compulsion. When they feel an imperative desire, they are behaving like this because some dissociated part of their personality is compelling them to do so. Nor is this limited merely to telling lies. There is no limit to the number or variety of the compulsions from which one can suffer. These may be as far apart as compulsions to go back to see if one has closed the front door properly or to avoid treading on the cracks in the pavement, to the terrible suicidal or homicidal compulsions from which severe mental patients suffer. In every case we could conclude that these compulsions were due to a split-off part of the personality.

On another occasion Miss Beauchamp made a certain promise. Sally tried to make her break that promise, and Miss Beauchamp suffered from attacks of fear. These were apparently causeless, and suddenly, for no apparent reason, she felt frightened, shivered and her heart thumped, etc. Again we can conclude that emotion

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which is apparently causeless is produced by some dissociated part of the personality threatening the other part. This allows the emotion to be felt although, because the enemy is split off the main bulk of consciousness and the ideas belonging to it are not integrated with it, the cause of the emotion cannot be known to the sufferer.

Sally was very critical of Miss Beauchamp, and she constantly expressed her poor opinion of her. Miss Beauchamp was, according to Sally, very careless with money, was dull and uninteresting and so on. This critical attitude of a part of the personality we shall find later was noticed by Freud.

While Dr. Prince was studying Miss Beauchamp she started to develop yet another personality, which Sally named "the Idiot." Prince says of her, "She had individual peculiarities of character, of disposition, of tastes, of habits, of memory and of physique. Her psychological reactions to the environment and her mental acquisitions, too, were in some respects different. . . . She was much more normal, more healthy in mind and body, than Miss Beauchamp."

Sally greatly disliked this new personality and expressed her contempt for her. "She described 'the Idiot' as irritable, bad-tempered and given to telling lies." This personality had little memory of things which had happened in the past, and so, according to what we found in our previous study of the multiple personalities of Félicité, Louis Vivet and Sally, this new personality, "the Idiot," must be composed of a collection of more adult memories.

This new personality, "the Idiot," was found to appear in a curious way. One day Dr. Prince was about to hypnotise Miss Beauchamp and the patient said, "No one shall do that but Dr. Prince." He said, "Am I not Dr. Prince?" She insisted that he was someone called "Will," and was very worried to think that he was in the room. She thought that he had risked his life in climbing up to the room. She believed that he had climbed in through the window.

Such a multiplicity of personalities—Sally, the Idiot, and Miss Beauchamp—made life very complicated both for the unfortunate owner of such a number of mental facets and for Morton Prince, who was trying to study her.

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Fortunately he discovered that this last personality was able to see visions by the process of fixing her mind, or really by letting her mind dissolve in fantasy. She was able by this means to evoke scenes from her past life, and so learn more about herself. During one of these visions she confused Dr. Prince with the mysterious "Will," and described the scene in which she first appeared to Dr. Prince. This scene fused with a previous scene in which he was replaced by "Will."

He began to suspect that the real personality was not the sick and ailing Miss Beauchamp (B. 1) that he knew, but that the personality called "the Idiot" by Sally was the nearest one to the real personality.

After some difficulty he obtained a story of emotional shock which was apparently the cause of the dissociation. He tells the following story as having been obtained from all of the personalities.

"It is necessary to go back six years. . . . In 1893 Miss Beauchamp was a nurse in a hospital in a neighbouring city. . . . The passion of her life had been to be a hospital nurse, and at last, in a fit of idealism, she had entered this hospital. One night, while in the nurses' sitting-room conversing with a friend, Miss K., she was startled on looking up to see a face at the window. It was the face of her old friend William Jones, a man whom, with the idealism of girlhood, she worshipped as a being of superior order. He was much older than she, cultivated and the embodiment of the spiritual and the ideal. At first Miss Beauchamp thought the face an hallucination, but in a moment, seeing that it was a real person, she hastily got Miss K. out of the room, making the excuse that she herself was needed in one of the wards. As soon as Miss K. left, Miss Beauchamp went down to the door, where she met Jones. It transpired that he had stopped . . . en route for New York, and had wandered up to the hospital. Seeing a ladder (which had been left by workmen) leaning against the side of the building, he had, in a spirit of fun, climbed up and looked into the window."

Apparently there were other shocks connected with this incident, including a terrific thunderstorm and a fright with a delirious patient.

"Miss Beauchamp returned to her duties much agitated. For several days she was in an excited state. She walked the wards

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by night, and in the day-time, when off duty and supposed to be asleep, slipped out of hospital and wandered about the fields. Then she began, according to Sally's account, gradually to change in character. She became nervous, excitable and neurasthenic. All her peculiarities became exaggerated. She became unstable. . . . She grew, too, abnormally religious."

Now, since the personality which was known as "the Idiot" had been split off at the time when Miss Beauchamp had this shock, it is understandable that she would have no memories since the occurrence. This would explain the apparent ignorance which this personality showed of recent events.

After a great deal of experimentation, Prince discovered, through the agency of Sally, that when Miss Beauchamp and "the Idiot" were hypnotised, it produced the same person; this person had the same memories, and so on. He later succeeded in synthesising the whole personality, and produced a completely new one. When he succeeded in doing this all the hysterical phenomena disappeared. There were no more hallucinations, no lack of volition, no automatic writing and no more crystal visions. She was an integrated and new person.

The story of Sally Beauchamp has been described because it is the most complete study of multiple personalities ever made. Although we must admit that certain of the personalities were spontaneous, one cannot help feeling that Prince did either consciously or unconsciously encourage the development of some of them.

Before we leave the story of Sally Beauchamp it is worth while noting that as a child she frequently had visions of Christ and the Madonna, and used to believe that she had actually seen them. The vision never actually spoke, but made signs to her, and made her feel that all was well. She had these visions only when she was in some difficulty from which she found it impossible to extricate herself. On one occasion when she had lost a key her vision of Christ led her down the street into a field where, under a tree, she found it.

Now, these visions are of great interest to us. Firstly, they show that the tendency for Miss Beauchamp's mind to split or dissociate must have occurred as a child. This would disprove Prince's idea that her dissociated condition was mainly due to the

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shock she had while a hospital nurse. Secondly, they are of great interest in explaining the visions which various saints and others have had, and which have been given importance in all religions. Obviously if we can explain the visions which Sally Beauchamp had as being due to a splitting of her personality, then we can explain all visions on the same basis. The fact that Christ in the vision led her to where the key had been lost proves nothing, since the memory of where the key had been placed was retained in the dissociated part of her mind. These visions occurred only when she was in difficulties. It is in such situations that the mind tends to dissociate. It goes without saying that if dissociation can explain visions, then it can explain other religious experiences such as sudden conversions. Not only religious, but other conversions. One often encounters cases in which there is a sudden change in political or other belief which could only be explained by the fact that the convert has had a split in his mind. He has thrust the dissenting part of his mind away and has no part left which might criticise his actions.

In a paper on "An Experimental Study of Visions," Prince says: "It ought to interest the theologian to understand the psychical origin of visions, like those of Saul of Tarsus, Luther, Savonarola and hosts of saints, which have had such influence upon theological thought. If it had been understood, as we must believe, that such visions were only the pictorial representations in consciousness, according to natural psychical laws, of fleeting thoughts, prayers or beliefs perhaps long forgotten, with which the religious enthusiast has occupied his mind at one time and another, the influence of the Church might have been differently exerted."

It is not only the hallucinations of the saint that are caused by the mechanism of dissociation, but those which are regarded by the spiritualist as being manifestations of the dead are also usually caused in this way. Morton Prince tells of a patient who, he says, "undertook against my advice to have herself developed into a medium. The 'professor' claimed to have developed a very celebrated medium who has since been the study of Dr. Hodgson, Professor William James, Professor Oliver Lodge and others. My patient told me that her education consisted in gazing intently, in conjunction with the professor, at a spot in the middle of a

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table, until she saw a vision at that spot. This was repeated in each lesson. If I remember rightly, a low diet and fatigue were coincident factors. My patient found that she was successful beyond her courage and, becoming alarmed, reported to me. These visions, I think, soon got beyond her control and came against her will, but a cessation of the experiments and a little hygienic treatment stopped them."

The writer has seen a patient who practised spiritualism for years, and this patient allowed the manifestations to get quite beyond her control. Unfortunately he had no opportunity of subjecting her to a profound study, but it is doubtful whether she would be amenable to treatment at all.

By his studies Prince has really disclosed the unconscious. He was very reluctant to postulate, however, an unconscious in the sense in which we shall find Freud used the term, and always preferred to call it the co-conscious. Prince seems to have had no idea of the unconscious in the Freudian sense, and insisted that hallucinations were "an element in a highly developed adult thought-process." For Prince the co-conscious was a more satisfactory term than the unconscious, because he felt that it was mainly composed of bits of an adult mind which had been dissociated. We shall see that for Freud the unconscious meant mainly the residue of infantile life. Morton Prince's ideas are the natural development of Pierre Janet's discoveries. Janet opened the door to the study of abnormal psychology by the discovery of the process of dissociation or splitting of the consciousness. Prince developed this idea and formed a conception of a collection of split-off pieces of consciousness which he named the co-conscious. We shall see in the next chapter how Freud developed this idea still further and formed his conception—a truly magnificent one—of the unconscious.

When one talks of pieces being split off consciousness and being stored in what Prince called the co-conscious, most people raise the question of what is happening to the dissociated pieces of consciousness "when not in use" (if one will permit such a term): Where has the split-off piece gone? Is it still feeling and alive? and similar questions.

Now, if one asks such questions, the only thing to do is to refer back to Janet's original postulation of the ego and the nature of

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consciousness. The ego, it will be remembered, was composed of all the integrated reactions which had developed in the organism. Consciousness consisted of the assimilation of new impressions and their assessment by means of the memories and emotions of the past (the ego). Now, it must be remembered that consciousness is composed of an assembly of reactions, and is *not* a mysterious ethereal substance with which we are endowed at birth. When a piece of consciousness is split off or dissociated from the main bulk—that is to say, from the ego—it is not a piece of mysterious substance which has the power of feeling, seeing, etc., but an integrated series of reactions big enough to assimilate and assess new impressions, and so capable of reacting like a little ego. In other words, it is sufficiently strong for its reactions to become predominant and displace the reactions of the main bulk of consciousness—that is to say, the ego.

It is necessary to clarify this theory of dissociation even at the expense of boredom. To do this the writer intends to substitute for Janet's analogy of a hall full of electric lights as representing consciousness, the analogy of, let us say, the Income-Tax office (if such an unpleasant analogy will be forgiven). Now, let us suppose that in the normal healthy person all the parts of the mind are working unhindered in order to proceed with the work in an orderly fashion, exactly as in a well-ordered office all the clerks are doing their work together in order to go home to tea at five o'clock. We will examine what happens when some sensory organ, for example, in the skin of the thumb is stimulated. The sensory organ sends a message which passes up the nerve, up the spinal cord, to the brain. In the brain this impression or sensory message is compared with all previous messages from this part, and probably by stimulating the most similar previous messages stored there it is identified as, let us say, a pin-prick on the left thumb.

Let us suppose that the writer sends in his income-tax returns (representing the stimulation of the skin of the thumb). The letter goes through the post (which represents the nerve-track to the brain) until it comes to the office (representing the brain).^{*} In the office the income-tax return is taken and the previous returns (representing memories) are compared with the present return. By this comparison it is possible to see the nature of the return,

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and judge it correctly. The clerks work amicably, and any other clerk wanting to know something of the writer's income-tax return has only to ask to get full information. Now, you must observe that the work comes in and goes out by the post. The post represents the incoming sensory impressions and the outgoing orders to the motor and glandular systems.

Now, what happens when a person has a dissociation? Instead of having all the clerks working amicably together and sharing information, we find that one group of the clerks, together with their dossier of previous income-tax returns, begin to work independently. They refuse to share their information with the other group. In the same way a dissociated part of the mind loses all contact with the rest of the mind. It will be observed that whichever group of clerks gets hold of the post, that group will do the work as well as possible, and it will appear, to an independent observer, that this group is the office. Receiving no messages from the other group, he will be unaware of its existence, until in its turn this group manages to capture the post; then this group will appear to be the whole office. In the case of multiple personality the mind is split into a number of parts, and not just two. It follows that when Morton Prince asked himself which personality was really Miss Beauchamp, it was just as though he were asking which group of clerks was the whole office. Obviously no single group could be the whole. It was the fusion of *all* the personalities which composed the complete personality.

If we may be allowed to extend the analogy of the consciousness as being represented by an office, it will make clearer the understanding of the mechanism of hallucinations. We shall find in the case of these that they are produced by the dissociated section of consciousness. It was as though the group of clerks who could not gain possession of the mail conspired to place false mail in the post. Thus the clerks who *were* in control would think that letters were coming in from *outside*, whereas really they had been concocted *inside* the office.

It will be understood that, if the dissociated part of the mind can only influence the sense-organs, then the patient will suffer from visions, or, what is more common in the insane, will hear voices saying unpleasant things to him. The patient insists that he *actually hears* the things which are said. So, to revert to the

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analogy of the office, would the clerks who were obtaining the mail think that the wrong letters (which had been added to it by the other group of clerks) were coming in from the outside. They would naturally get annoyed with the people outside for sending in such letters, just as the insane patient attributes his "voices," which originate in his mind, to people in the street, and so on.

Just as it would naturally be impossible to run an office satisfactorily under such conditions with groups of warring clerks, so it is impossible for the mind to work properly, and the patient usually complains of exhaustion and fatigue, as well as other symptoms.

It must be appreciated that dissociated fragments of the mind can be of all sizes. The larger dissociations, such as we find in Miss Beauchamp, can and do behave as complete egos. The next-size piece of dissociated mind can produce an alteration in the behaviour of the patient, but does not possess a sufficient number of memories and so on to produce an integrated conscious ego. It is this type of dissociation which produces a fugue—one of those journeys, already described, in which the patient travels a great distance and then "wakes up" and does not know how he got to where he finds himself.

We can have smaller pieces broken off the main bulk of consciousness, and these Jung described as "complexes." We shall see that these complexes are nothing more than the combination of an idea or a group of ideas with an emotion. When we get a patient to disclose a complex, what we find is that he has an idea and feels an emotion. We shall see that the complex is like the other dissociated pieces of consciousness, in that it is not accessible to the ego. It is unconscious. When we have the conjunction of an emotion with an idea in consciousness, we call it a sentiment. For example, the emotion of love plus the idea of country is a sentiment. We shall study these conceptions more closely when we study Freud.

It would not be surprising if those who study psychology in order to hear vaguely comforting mysticism should revolt at the materialism and mechanistic views expressed by both Janet and Morton Prince. If they should feel that they have not had this mystical satisfaction, and do not like their minds dissected in a

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cold-blooded manner, and should be annoyed, it is necessary to point out that the views expressed are those of Janet and Morton Prince, and not necessarily the writer's. But more important still is the fact that, wherever an advance has been made in psychology, it has been made through the use of a mechanistic analogy. Wherever psychology has become hopelessly involved and stagnant, it has been through indulging in vague mysticism. Let us be as mechanistic as possible, then we shall make advances. Janet, with his principle of dissociation, opened the door to the study of abnormal psychology. Morton Prince, with his study of multiple personality, helped to pave the way for general acceptance of the discovery of the wider realms of the unconscious which were being made contemporaneously by Freud. Freud's use of mechanistic devices and mental mechanisms has helped psychology to progress farther than ever before. Let us, therefore, beware of mysticism and adhere closely to our comforting mechanistic views.

Again we must ask ourselves in the case of Morton Prince, as we did in the case of Janet, Did he add anything to what was known to aid in the treating of patients? He did not discover any definite method of treatment such as we shall find that Freud did. On the other hand, Prince appreciated that emotion had a disruptive effect on the mind. He did not, however, appear to appreciate that it is necessary to go back farther than the immediate causal emotion. For example, in the case of Miss Beauchamp he discovered that she had had an emotional shock produced by her friend appearing at the window. He seems to think that this is more or less sufficient to account for her illness. Yet it would have appeared probable that earlier emotional shocks would have paved the way for the final cleavage.

Morton Prince appears to be of the opinion that the dissociation in the case of Miss Beauchamp was due to an inherent lack of cohesion in her mentality, and so failed to search for any deeper causes.

Prince treated her with hypnosis, and apparently succeeded in soldering the various personalities together. He was really rather mystified as to how he did this, but it was somehow by identifying the hypnotised elements of her first and fourth personalities. How this joined the patient's personalities together he seems to appreciate as little as anyone else, and is very vague about the

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whole matter. It is obvious that the complete Miss Beauchamp must be the unification of all the personalities, and hypnotised parts of a personality are only produced by the further splitting of previously dissociated pieces. At any rate, by some mysterious process which he does not explain, Miss Beauchamp did eventually get quite well, married and had children.

Morton Prince's contribution to the study of abnormal psychology lies less within the realm of treatment than within the understanding of the basic processes without which it is impossible to develop a mode of therapy. His studies in multiple personality are important inasmuch as they show the extent to which the fissures or dissociations can penetrate into the mind. Moreover, the clear way in which he demonstrated the mechanism of the production of hallucinations and other symptoms gave a great impetus to the study of psychology.

CHAPTER FOUR

FREUD AND THE DISCOVERY OF PSYCHOANALYSIS

ALTHOUGH the work of Morton Prince and Pierre Janet forms a convenient and natural introduction to the study of Freud's discoveries, it must not be concluded that psychoanalysis would not have come into being had neither of these contemporaries existed. Analysis was Freud's own invention. He says in a paper on the History of the Psychoanalytic Movement: "For psychoanalysis is my creation; for ten years I was the only one occupied with it, and all the annoyance which this new subject caused amongst my contemporaries has been hurled upon my head in the form of criticism."

Freud was born in Freiburg in Moravia in 1856. His parents were Jews. When he was old enough he went as a medical student to the University of Vienna. Whilst he was an undergraduate he obtained a demonstratorship under Ernst Brücke. Brücke was a professor of physiology, and educated Freud in the careful methodical way of working which he has always since applied to his work.

In 1884 he was an assistant physician at the General Hospital. Here he obtained a sample of cocaine and examined its properties. He wrote a report in which he noted that it had anæsthetic properties if applied to the tongue or other mucous membranes. This was read by a young ophthalmic surgeon, who introduced it as an anæsthetic for operations on the eyes. Few people who are so free in their abuse of Freud realise that his discovery started a new era in ophthalmic operations.

In 1885 he went to Paris to study under Charcot, who was then the most famous neurologist in the world. Here he worked as a pathologist, and those who work on the brain damage produced by birth injury have still to refer to the papers published by him at this time.

While working with Charcot, Freud was very impressed by an

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experiment in which he reproduced the symptoms of hysteria by means of hypnosis. This must have been very surprising to him, since the German and Austrian physicians were still teaching that hysteria was caused by organic changes in the nervous system, and indeed this is believed not only by foreign neurologists, but is even taught at one of the largest neurological hospitals in London at the present time.

Freud returned to Vienna and reported that not only had he seen the symptoms of hysteria produced by means of hypnosis, but had also seen male hysterics. He was greeted with derision, and politely told not to make a fool of himself.

He worked with a friend of his family, Josef Breuer, who had established a good practice. Breuer had discovered that it was possible to revive the memories of hysterical patients while they were under hypnosis and, as soon as the memories appeared, the symptom disappeared. They published papers on their work in 1893 and again in 1895. In these they expressed the opinion that the recovery of the memories removed the emotion. They called the method "catharsis," and thought that the patient was being purged of the causal emotion. This purgation of emotion is called "abreaction."

This method is the reverse of Charcot's experiment. Charcot instilled the idea and produced the symptom; Freud extracted the idea and abolished the symptom.

Freud then went on another visit to France, but this time to Nancy to study under Bernheim. He was very impressed by one of Bernheim's experiments. Bernheim would hypnotise a patient and make a post-hypnotic suggestion. He would say to a hypnotised patient, "When the clock strikes twelve you will open the window." He would then wake the patient, and when the clock struck the patient would open the window. Bernheim would then demand to know why he had done this. The patient did not reply "Because you told me to do so," or "Because I felt compelled to do so." No, he would "beat about the bush," and eventually produce some statement which he had made up to excuse his action. He would say: "Because it is so hot in here," or give some similar explanation.

This did not satisfy Bernheim, and he would insist that the reason given was not the right one. He would hammer away at

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the patient until at last the latter would remember why it was he had opened the window. Bernheim had succeeded in connecting the idea which was unconscious with consciousness. At last the patient was able to say: "I opened the window because you told me to do so. I remember now that you said, 'When the clock strikes twelve you are to open the window.'"

Freud had the key to the whole matter here. He realised that one must never accept the patient's explanation, because the patient does not know why he had symptoms. He understood that the real cause of the patient's illness was locked away deep down in his unconscious mind. But more than this, *he knew how to rescue the idea from the depths of oblivion*. One must persist and persist until the barrier is at last broken down.

When Freud tried his new method on hysterics, he found that he was not always successful. He pressed his hand on the patient's forehead, and sometimes the patient remembered an incident. Soon he ceased to do this—it was too reminiscent of hypnosis. Now he found that the best thing was to allow the patient to talk at random. This he called "free association," and it is the method which is still used. The patient lies on a couch, and the physician sits at the head of the couch while the patient talks and talks, until sooner or later he is able to bring up little incidents which piece together until he realises attitudes and memories which have previously been hidden in parts of his mind inaccessible to him. Freud noticed that the very things of which the patient was reluctant to speak were the things of most importance in the causation of his illness.

Now let us consider what it was that he had discovered. When Janet and Morton Prince were being discussed, it was seen that pieces of consciousness (*i.e.* ideas and emotions) could be split off or dissociated. These pieces became inaccessible to the main bulk of consciousness, with the result that the patient remembered the incident and felt the appropriate emotion. (Jung was later on to call these dissociated pieces of consciousness "complexes," and it is a convenient term for them.)

It will be seen that the work of Freud so far follows directly on the discoveries of Janet. But Janet thought that the complexes had been dissociated because of a lack of mental tension; Freud showed that the complex was thrust out of the mind because it

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carried a painful emotion. The mind does not fall to pieces because it is of poor construction—it is driven apart by strong forces.

Freud called the force which was strong enough to prevent the patient remembering things, or approaching the memory by free association, by the name of "resistance." He called the process by which an idea is thrust out of consciousness "repression." Now, both these terms are used wrongly by those who do not appreciate the significance of their origin. One often hears people who talk at length of their "inferiority complex" and how they have always suffered from an inferiority complex and so on. It will be realised, of course, that these people are trying to say that they have a feeling of inferiority which is due to complex. The complex which is causing this feeling of inferiority could not possibly be known to the sufferer, since the moment it became conscious the feeling of inferiority would disappear. A complex is always unconscious—forgotten. Again, "repression" is often used to mean a conscious attempt to thrust something out of the mind. Sometimes one hears it said that someone has tried to repress a thought all day. Now, this is impossible. Repression is an *unconscious* process. One cannot possibly know when one is repressing an idea or not. Exactly the same with resistances. The moment one knows that one has a resistance against telling something, then one is beginning to destroy it. Freud's patients who avoided certain subjects did not consciously do so, and in fact they were unaware that any avoidance was occurring.

It will be seen that Freud was in a similar position to a spy practising espionage in an enemy country. Every effort was being made to prevent him obtaining information, and he was forced to piece together the little scraps of information which the patient divulged accidentally in his free association. Freud noticed another strange thing. He noticed that, after a patient had been free-associating for some time, he started to develop emotion towards the physician. That is to say, that the patient showed either love or hate for the analyst. He did not express this emotion in so many words, but it became more or less obvious from his behaviour. For example, if the patient wanted to express love he would "forget" something—his gloves or umbrella—so that he had to return for it, or he would inquire solicitously regarding the health

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of the physician and his family. One patient known to the writer started to dress like the analyst's daughter, and it is not unusual for a patient in this state to become very jealous of the physician's other patients. Now, it was not surprising that the patient should come to respect and even to love the man who was trying to cure him of an unpleasant illness, but not only did Freud find that his patients showed affection towards him, but they also showed hate. This was very surprising and unexpected. Just as when they were expressing love, the patients did not express their hate in so many words. They showed their hostility obliquely. They might praise some other physician, "forget" to pay for the treatment, or even slander the analyst, usually so that anything unpleasant they said would eventually be told to him.

Freud now made the surprising discovery that his patients were behaving towards him as though he were someone that they had loved or hated in the past. Usually he was treated as though he were a father or mother (for sex was disregarded). The patient was therefore transferring to Freud emotion which belonged to his—the patient's—parents or perhaps his brothers or sisters or someone else he had loved. Freud therefore called this manifestation of emotion "transference." It will be appreciated that when he described transference he was playing into the hands of those who were only too glad to accuse him of every form of immorality. Needless to say, transference is invariably treated as any other manifestation. The physician is not flattered if a beautiful woman has fallen in love with him, because he realises that the love she wishes to shower on him really belongs to someone—perhaps her father—whom she has loved as a child. Nor is he insulted at the exhibition of negative transference or hate. He appreciates that it is not his person which is being hated, but a parent's. The transference is useful inasmuch as it acts as a stimulus to the patient, but it must be controlled. This is done by the analyst continually referring it back to its source. The analyst who allows transference to accumulate deserves what he invariably gets. If the patient loves him excessively, the analysis comes to a standstill; if he hates the analyst too much, he brings a chopper!

It is worth while referring here to the way in which the medical profession greeted Freud's discoveries. He says, but without the bitterness which most of us would have felt, "Meanwhile my

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writings were not in the reviewed professional literature of the day. If an exception was made, they were always treated with scornful and pitying commentation. Sometimes a colleague would refer to me in one of his publications in very short and unflattering terms, such as 'unbalanced,' 'extreme,' or 'very odd.'" He tells how his books were often reviewed without being read, and even reviewers who did read them and appreciated the nature of his discoveries did not have the courage to express their real opinions.

Freud soon found that his patients brought him their dreams and, even before he separated from Breuer, because of the latter's concern regarding the sexual nature of the matter they were exploring, Freud appears to have had some conception as to the interpretation of dreams. He realised that day-dreams are always the fulfilment of a wish, and came to the brilliant conclusion that night-dreams were also, but that the wish was concealed. He studied the way in which dreams are twisted so that the real meaning is not appreciated. But he also asked himself why this occurred, and discovered both the how and the why of the matter.

Freud found that the dream as the dreamer relates it is merely a façade which conceals a deeper meaning. He called the obvious façade part of the dream the "manifest content," and the deeper hidden meaning the "latent content." The process of distortion he called the "dream work." One constantly meets people who say, "Of course I know what my dreams are about—they are only concerned with the things which I have done during the day." Such people are being misled by the manifest content, and the real meaning has escaped them. Freud realised that the events of the previous day are frequently used as material to form a dream, and he called this "the residue of the previous day." The first thing to study was the process by which the real meaning of the dream was distorted. He found that the mind utilised a number of mechanisms to achieve this. The first of these is "condensation," and by this is meant the telescoping of a number of parts of the causal factors of a dream so that one incident in the dream may represent many of them, or the more obvious condensations in which a man has two faces or two people's features on one face. Even more remarkable is the process of "displacement," by which the emotion which should be attached to one

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element of the dream is moved on to another. A further distortion is "symbolisation," and this is more or less inevitable, owing to the fact that dreams are pictorial, like political cartoons. In fact, it is easy to see that the cartoonist utilises dream mechanisms, as when he symbolises the placidity of Mr. Baldwin by grafting his face on to the body of a cow. Britain represented by a bulldog and France as a poodle are favourite symbols in cartoons. In a dream, if one feels that a person behaves like a pig, his behaviour will be shown by using a pig for him and so on.

After the main facts of the dream have been treated by these distortions, it is now subjected to a process called "secondary elaboration," and by this is meant the re-synthesis of the distorted parts to form a coherent story. There is little wonder that, with all these distortions at work, it is difficult to uncover the real wish which lies so well concealed behind the finished product.

Freud called the force which distorts the meaning of the dream the "dream-censor," but it is without doubt only a manifestation of the same force which causes resistance or repression. Many people have been foolish enough to regard the censor anthropomorphically, as though it were really a mental manikin which censored the dream, but it will be appreciated that it is only a force.

The objection might well be made as to the reason for such an elaborate psychical machinery for distorting dreams. Why should the dream not be allowed to enter consciousness undistorted? It is easy to answer this question, because Freud discovered that the wish which a dream represents is a sexual or an aggressive one.

Since the repressive forces are too strong to allow the dreamer to discover the meaning of the whole dream, Freud found that it was necessary to divide it into its various incidents and elements. The patient then free-associated on each part, and so the meaning of the various parts could be discovered and when reassembled reveal the real meaning. Often patients who are just starting analysis bring very naïve dreams which are easy to interpret. For instance, a patient of the writer's brought a dream in which she saw three coffins on trestles. Her mother, sister and brother then came into the room. It is not surprising that this patient later revealed that she had considerable hostility towards these

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relatives, and her dream was nothing but a death-wish towards them.

A dream will often throw a considerable amount of light on a patient's illness. For instance, a patient who stuttered had the following significant dream. He dreamed that he was having relations with a woman, and then he went downstairs, where his father came up to him with a mason's trowel. He thrust some cement down the patient's throat and said, "That will teach you to tell lies." This suggests that the patient's stuttering was a punishment inflicted on himself for his prohibited desire and efforts to hide them.

Dreams are a valuable indication to tell the analyst what is happening with regard to the transference. A patient who shows positive transference will dream that the analyst is being kind and is a pleasant person. For example, one of the writer's patients dreamed that instead of being dismissed at the end of the session he was invited to tea. On the other hand, if the patient is developing negative transference and feels hostile to the analyst, he will dream that the analyst is unpleasant, or perhaps in grotesque circumstances representing him as a dirty and slovenly person and so on.

Freud said that the dream was the "royal road to the unconscious," and it certainly has lived up to this description, but there is one danger in the interpretation of dreams which it is well to understand. This is the use of universal symbols. It will be appreciated that the nature of all symbols was originally discovered by free-association. After a time it was found that certain symbols always, or, rather, nearly always, meant the same thing. Although this may be so in dreams, it is always possible to test the validity by asking the patient to free-associate on the symbol. We shall find, however, that Jung has used the universality of symbols too freely in applying them to myths and legends, and has tended to lose himself in mystical obscurity. It has been previously stated that patients who intended to show love or positive transference to the analyst "forgot" various articles, for which they had to return, and so visit again the beloved analyst. This drew Freud's attention to other psychological manifestations which show an unconscious motivation. This group consists of blunders, slips of the tongue and slips of the pen.

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Blunders will often show what is in the unconscious, and when pointed out will usually be acknowledged as correct. They occur in all of us. A good example of a blunder showing an unconscious motivation was found in one of the writer's patients. This was a lady who for various reasons had ceased to love her husband. She noticed that she constantly forgot her latch-key. Not only did she forget it, but continually lost it. As soon as she got another she lost that! The meaning of the blunder is obvious—she did not wish to live there. When a married woman signs a letter in her maiden name "by mistake," it is an evil sign, since it shows that really she wants to be single.

A good example of a significant blunder was shown by a doctor known to the writer who applied for a post in Birmingham when resident in London. He was told to attend a committee meeting on a certain day. He knew that the chances of being chosen for this post were very remote, and that it was really not worth while to interrupt his work to journey to Birmingham on such a slender chance. He was more or less compelled to go, since the committee had made an appointment to see him. Imagine his surprise when he arrived at the station on the day appointed to find that he had left his pocket-book at home, and so was penniless. He was successful in outwitting his unconscious by persuading the stationmaster that he was a person of substance, and so was given a pass. His unconscious, however, was a true prophet, since he did not get the post.

Besides blunders such as the ones described, Freud noticed that slips of the tongue frequently showed the true thoughts of the speaker. He gives a good example in the husband who said to his wife, "If one of us was to die, I should go to live in Paris." One might with reason conclude that the husband's thoughts were not very charitable towards his wife. Another example is shown by the domineering wife who stated that the doctor had said "my husband could have whatever I like to eat."

The slip of the tongue, like the blunder, had been noted long before by dramatists, and it was used before Freud pointed out its significance.

The slip of the pen is very similar to the slip of the tongue. There is little doubt that some of the amusing printers' errors which appear in papers and books are the result of a similar

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process. This is particularly so when the books deal with some subject, such as religions or politics, in which there is a strong emotional tone to be found.

Although it is not of really great importance in the exploration of the unconscious, with which we are mostly concerned, yet it is of interest to note that the same mechanisms which occur in the escaping of the forbidden wish in dreams is found in the production of wit. It is worth while pausing a little in our study of unconscious mechanisms to notice examples of this. The first mechanism of distortion in dreams which was noted was that of condensation. This is frequently used in wit, and produces a rather naïvely funny effect. To say that an old man who is fond of telling boring stories is in his "anecdote" is to use condensation. Again, to describe an outing as a "charabanc" utilises the same mechanism. The effect is obtained so easily that this sort of wit has become rather cheap.

A much more subtle effect is produced by the use of the mechanism of displacement. Much of the funny effect of bathos depends on this, because the emotion is displaced on to some indifferent object. It produces a wit which is rather cruel in effect, because one feels that the emotion is not in the right place. An example of this kind of wit is shown in a case like this. A man says in describing an accident: "The driver had very bad luck—not only were his wife and son killed in the accident, but he broke his wrist-watch too"! The effect is due to the displacement of the emotion felt for the death of the wife and son on to the trivial watch.

Symbolisation is also frequently used in wit, and this seems to produce wit of the most pleasing kind. A clear example of this is shown in the following joke. It is said that Mussolini, wishing to make his army more formidable, summoned to him a very celebrated chemist. The chemist passed through the streets, which were hung with pictures of the Duce; he heard the people speak of him in hushed tones of awe, and then entered the palace where he worked. In the waiting-room he read the newspapers, which were filled with photographs of the Duce riding, flying, walking and making speeches. The news was mainly composed of the content of these speeches. At last the chemist was admitted to the great man. He walked up the enormous room until he

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reached the great desk, which was littered with papers, at which the Dictator was working. For some time no notice was taken of him, but at last the Duce raised his head. "Tell me," he said, "what is the most deadly gas known to science?" The celebrated chemist thought a little, and then he replied, "Incense."

Here we have a good example of the function of wit to penetrate some prohibition. It would have been impossible for the chemist to rebuke the all-powerful Dictator, but by symbolising adulation and worship by incense he is able to do so. It seems that the more refined the wit becomes the harder it is to see these mechanisms clear-cut; but in coarse wit, such as that used in music-halls or by comedians of the lower type, in which a strong sexual element appears, the mechanisms are the more obvious. On the contrary, the less distortion which is used the less comic the effect and the more likely are the audience to respond to the unconcealed meaning of the joke. The effect curiously resembles that found in dreams which are not sufficiently distorted, and most people can remember having had dreams which have shocked and pained them because they have realised the real meaning of the wish which has been too frankly revealed. It may be presumed that wit is really a refinement of a method of allowing forbidden thoughts to slip through the resistances which are there to keep them hidden.

It is worth while, before we leave the subject of dreams, to examine some experiments in which it was possible to see the beginning of the dream before it was formed. Shrötter performed the interesting experiment of hypnotising a patient, and while he was under hypnosis suggested that he should have a dream about some crude sexual matter. This dream was to be remembered when the patient awakened. He suggested that the patient should dream of having intercourse with a lady friend of hers. The patient, who was herself a woman, had the following dream. She dreamed that her friend appeared with a travelling bag with a label attached with "Ladies only" written on it. If a patient stated that she had had such a dream, the last thing she would credit would be its real meaning, yet the mechanics of the dream are really quite clear. One might dismiss these experiments as fortuitous, but they are confirmed by further experiments on patients who were suffering from chronic alcoholic damage to the brain. Two physicians, Batlheim and Hartmann, told these

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patients stories with a very crude sexual content. Later they asked the patients to repeat what they had been told. The patients told a very much distorted version of the stories, and utilised the very distortions which we have noticed to occur in the production of dreams.

It will be observed in both these cases that there was no question as to the real meaning of the dream, since it was suggested, and these experiments must be accepted as confirmatory of Freud's theories as to the origin of dreams and the mechanism of their production.

We can now study the origin of symptoms, and our studies of other productions of unconsciously distorted wishes will help in the understanding of their origin.

One of Freud's earliest discoveries regarding the origin of symptoms was that the mechanism of displacement, which we saw is of such importance in the distortion process in dreams, is utilised just as obviously in the production of symptoms. Usually the emotion is one of fear, and the fear is invariably displaced from the real object to some less prohibited one. Let us consider what is fear or anxiety and its value in mental life. It will be readily seen that fear of a wild animal, for example, is to place us in a state of preparedness regarding it, and if we had no knowledge regarding similar beasts, we might not fear it at all—much to our misfortune. But what of the attacks of anxiety which we may call "neurotic anxiety," for which there appears no obvious cause? Sometimes this anxiety attaches itself to certain objects, so that the patient appears to suffer from an unreasonable fear of, let us say, cats. It is absurd to fear cats. What is it that the patient really fears? Freud states that the fear is really coming from an internal danger and is being turned outward. Why does the patient do this? The reason for this displacement is that he cannot defend himself from an internal danger, but if he can displace his fear on to cats, then by avoiding cats he can succeed in finding peace.

The writer once saw a case which shows clearly the mechanism of displacement. The patient was a young butcher who had, significantly, always taken a pleasure in the butchering business, which had entailed the slaughtering of animals. It would not be unreasonable to conclude that this man, who was not outwardly

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cruel in any way, had somewhere in his mind a considerable amount of cruel or sadistic feeling. This young butcher was in charge of a butcher's shop which was one of a series of chain-stores. He was responsible for the success of the store, and any failure would be treated sternly by his employers. Unfortunately, soon after he took over the store another butcher's shop was opened in competition near by, and this diminished very considerably the takings of the shop which he managed. The fall in the receipts of the store was noticed at the head office, and an inspector was sent down to interview the young manager. The inspector reprimanded him very ruthlessly, and refused absolutely to listen to the explanation that the rival store was doing the trade a great deal of damage, and so unreasonable was he that the manager was soon boiling with rage. He did not dare to show his fury, since had he done so it would probably have meant his instant dismissal. While trying to curb his anger he saw a butcher's cleaver lying on the bench. He remained impassive, or as impassive as his suppressed fury would allow him. He said later if he could have struck the officious inspector he would have felt better. A few days after this incident he started to have a fear of knives and a fear that he would injure someone with a knife or a cleaver. This fear grew so strong that he found it difficult to use even blunt domestic knives. Now, it is quite obvious that the manager really wished to kill the inspector, or at least to dissipate his rage by hitting him. This was forbidden to him, and the wish to kill was not recognised. The wish to kill someone was prevented by a fear that he might do so, and this fear was displaced on to the very weapon which he might have used. This crudely told account does not emphasise all the finer points which are always to be found in such cases, but it does demonstrate clearly how a forbidden wish can produce a fear which, being effectually displaced, checkmates the wish being successfully attained.

This case does not show displacement so clearly as some. One case in which displacement is shown more clearly was that of a young man whose mother opposed his engagement and tried to stop him getting married. This young man developed a fear that his breathing was not as it should be. He visited all the chest hospitals in London, but nothing could be found in any of the multitudinous examinations which were made. He therefore

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felt that the trouble must be in his nose. He then visited all the ear, nose and throat hospitals, but still nothing could be found. He came under the care of the writer, and his attention was drawn to his tangled domestic affairs, and although circumstances did not allow any proper analytical treatment, he was able to correct the situation by adjusting his difficulties and was eventually happily married. It will be seen that the anxiety regarding his mother's attitude towards his engagement had been displaced from this painful situation on to his breathing, and not until it could be returned to the original situation could he feel well. Why the breathing was chosen as a convenient anchorage for the anxiety cannot be said. Nevertheless it will be seen that it was much less painful to worry about respiration than about his mother's disapproval of his engagement.

Closely related to displacement are two other mental mechanisms which are really the most important and fundamental mechanisms in our psychic life. These are called "introjection" and "projection." Because it is easier to understand, projection will be dealt with first. Projection is the extrusion of unworthy feelings or thoughts which are attributed to other people or things. The usual example is that bad workmen blame their tools. The workman is reluctant to admit his inferiority, and attributes the poor work which he does to the tools. He had projected his own inferiority on to the tools. It will easily be seen that this mechanism plays a great part in our mental life. For instance, it is always the liar who regards other people as being prone to telling untruths, and the elderly spinster, who has unconscious sexual wishes, who seeks out all the scandal of the neighbourhood and attributes some sexual motive even to the most innocent behaviour.

We have already seen that hallucinations are produced by the fact that a painful experience or an unworthy wish has been repressed and is not available to consciousness. It can readily be understood that, when the patient is hearing comments on his painful experiences or forbidden wishes, he will attribute the voices to his surroundings. He will project the guilty knowledge on to other people.

Let us consider the origin of a case of mental disease from the patient's point of view. The type of patient who will suffer from the kind of mental illness which is being described will be a

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seclusive, asocial type of person. He will first notice that people take an unusual interest in him. They look at him suspiciously, and perhaps he feels that they sniff at him. He begins to feel that people are commenting on him. When he hears someone laughing in the street he feels that he is being laughed at. They are saying that he smells, and perhaps say that this is so because of some unworthy experience he has had in the past. He elaborates this into the idea that there is a plot by somebody or other to make him out a criminal, etc. Now let us consider the part which projection has taken in the production of this patient's symptoms. The patient has unconsciously attributed to his surroundings his feelings regarding his complex, and, feeling guilty, he thinks that everyone is looking at him because of this. He then believes the knowledge of whatever he has done is known to the outside world, so that everyone is saying that he is—let us say—a thief. The patient usually reacts with fury or horror at the thought that he could ever have done the terrible things attributed to him (which incidentally shows the strength of the forces which have repressed the incident). The feeling that the whole thing is a conspiracy is a sort of logical excuse called a "rationalisation" to explain why everyone should adopt such an attitude. To watch the development of such an illness with the slow but inevitable projection of more and more material, until the patient believes that everyone knows all his hidden secrets, is a curious and rather terrible experience. It must not be thought the projection always takes the same form. Sometimes a patient will think that all his thoughts are being broadcast or printed in newspapers and are being read by everyone. By means of projection the patient will sometimes come to believe that he himself is living in a world of thieves or sexual offenders or whatever is at the base of his own complex. The patient will never recognise that the things he is attributing to others really belong to himself, and any attempt to get him to do so will be met with either incredulity or frank hostility. A rather pathetic example of projection is found in those cases, which occasionally get into the papers, in which an elderly spinster complains that a young man is in love with her and is following her about. Of course, the truth is that the poor woman has fallen in love with the young man, but has projected her feelings on to him. This projection has the advantage of preventing her having to face the fact of her hope-

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less passion, and the secondary advantage of having, as she wished, the young man to be in love with her.

A mechanism which has been rather more neglected than projection is that of introjection. Now, this is a pity, since introjection is the fundamental psychological mechanism, and is really most fascinating in its behaviour. Introjection occurs particularly when we lose an object which we love. In this case we incorporate the psychic image of the lost object and adopt it as part of our ego. It will be seen that the formation of a child's personality depends a great deal on the amount of introjection which occurs. Introjection is unconscious, and must not be confused with mimicry, which is conscious. It would seem that there is a fundamental desire in our unconscious to throw out or project things which are hated and to take in or introject things which are loved. It will be seen that the child tends to introject the beloved parent, and this is the process which we mean when in common speech we say that a child has moulded itself on its parents.

Introjection is not so obvious as projection, but we must all have encountered those cases in which a child—say a daughter—has nursed her father through a long and tedious illness, perhaps cancer, and then when the parent has died she will develop the idea that she herself is suffering from the same illness. The popular explanation is, of course, that the illness “played on her mind” (whatever that may be), and so she developed the symptom. This is a crude way of stating that she could not bear unconsciously to be parted from the beloved parent, and so introjected him or identified herself with him. Having introjected him, she feels towards herself as though she really were him. She has taken him in—illness and all! Some years ago the writer had a case which shows the process of introjection so clearly that it cannot be bettered as an illustration. The case was a woman of about thirty-five years of age. She complained that she had no front to her abdomen. It was pointed out to her that there was every evidence of a front to be seen. She insisted that although it *looked* as though there was a front, really there was nothing. The reason for this patient's extraordinary delusion was discovered when her history was being carefully investigated. A few months before the onset of her illness she gave birth to a child which was maldeveloped, and which really had no abdominal wall. The

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patient did not see this child, which she really wanted very much, but her husband told her that it had this peculiar formation. It is easy to see that she had introjected the dead child and identified herself with it. The dead child was regarded as a part of herself, and naturally she attributed to herself the characteristics of the child, including the absent abdominal wall. It is sometimes seen that even in normal mourning this occurs to a slight degree, and those in this state will adopt or introject opinions or attitudes of the dead loved one and greatly resent any criticism of such things. It may be this attitude which will make a boy follow his father's profession, even if the father died before the child was old enough to know him. The son has learned that this was one of his father's attributes, and introjects it.

It will be seen that this process of introjection is such a complete one that there is a certain danger in giving a child an exaggerated idea of the perfection of his dead father, since he may introject the idea of his dead father's indefectibility and, having no imperfect reality for comparison, may come hopelessly to grief in trying to live up to it.

The question might well be asked why these processes of introjection and projection occur. Now, it has been seen that with displacement the emotion was displaced from something which was painful to something which was less painful. It is the infant's fundamental desire to avoid painful things and to be attracted towards pleasant things. In introjection the child absorbs that which he finds pleasant and makes it a part of his mental structure. In projection he tends to extrude that which is unpleasant to him, and since it must be expelled somewhere, he tends to attribute it to those which surround it. That both these processes are, when found in an exaggerated form, morbid goes without saying, and they are sometimes causes of serious illness. It is worth while pausing a little in our study of the "Freudian wish" to notice how introjection causes illness. This is one of the greatest contributions of Freud's theories to mental medicine. We have seen how the child tends to absorb or introject the parent which is loved. This would always be satisfactory if it only loved the parent, but in some cases not only does it love, but it hates the parent also. What happens when the child introjects this loved and hated person? We have seen that when introjection takes

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place, the child behaves *to itself* as though it itself were the introjected person. For all practical purposes the parent has become a part of the child's ego, and the emotions felt towards the parent are now directed towards itself. There is a possibility of this forming the basis of the serious illness of melancholia, since all the hate directed towards himself may become manifest by the patient becoming depressed and even suicidal. Suicide, after all, is the finest possible manifestation of hate towards oneself. People who are deeply depressed frequently bite their nails, pick their skin, and even pull out their hair. They refuse their food, and show as much hostility towards themselves as it is possible to conceive.

Although melancholia is a fascinating subject, we must not allow it to detain us, since there is a great deal to appreciate yet of the Freudian structure. We shall return to the study of the wish which Freud found so important. Now, it must be admitted that the enemies of Freud must be careful not to admit any single part of his discoveries to be valid, since one part is interlocked with the other part, and if one admits that one thing is correct, one is forced to admit the validity of the whole edifice. If one agrees that behind a slip of the tongue there lurks the hidden wish, then one is led on to blunders. One must accept that there is a wish behind blunders also. From this one is decoyed into dreams. If one once admits that Anna, Freud's little daughter, dreamed of tasty food because she had had no food all day on account of a bilious attack—that she wished for this food, and it caused the dream, then one must admit that all dreams are due to wishes. At this stage one is gained as an adherent to Freud for ever. From the dream to the hysterical somnambulism is but a tiny step, and if patients who suffer from these trance-like states are suffering because of a wish, then on the one hand every patient with hysterical symptoms must have a wish, and on the other hand every patient with those continuous somnambulisms which we call insanity must be exhibiting his wish also. When we consider man—this mighty giant who shoots his skyscrapers to the stars, who has dived to the depths of the sea and flown on supreme wings over the storms—we find that it is not the forces of the external world which can enslave him, but a little wish like a grain of dust which stops a great machine. We must not conclude, however,

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that the wishes which are so destructive to normal thinking are mere desires or simple cravings. They are those powerful wishes which are curbed as much as possible by the structure of civilisation. *They are sex and hate.* Although we shall study the nature of the unconscious in the next chapter, it is of interest to notice that man is not so bad as the description of these wishes would imply. Freud has said that man is both more immoral and more moral than he realises. There is no doubt that this is true. It must be realised that the patient is not ill because he gratifies his unconscious desires, but because he does not gratify them. This is not strictly true, since the patient does gratify his wishes—not in the frank sense, but obliquely and by means of symbols. I have sometimes comforted patients who have been distressed by the unpleasant ideas which treatment reveals by pointing out that the nicest people have the nastiest things in their unconscious minds !

It might well be asked " Whence comes this power of repression which is not only able to curb the strongest wishes of mankind, but actually to make these wishes pass out of the memory ? "

The answer is a simple one. It comes from the culture in which the child is educated and in which it acquires its knowledge of the world. It will be obvious that the more simple the culture which forms the child's environment the less difficult will it find its adjustment to those around it and to their mode of life. On the contrary, the more complicated the environment, the more things which are forbidden, the more " Thou-shalt-nots " and the more frequently " Don't " occurs in the parents' vocabulary, the more things will be felt to be wrong and the more to be repressed. Again, the more horror-struck those around the child appear at its lapses from grace, and the more guilty the child is made to feel, the stronger will be the forces of repression. One cannot help noticing, when one is in intimate contact with neurotic patients, how much better they would have been had they made a wiser choice in the matter of parents. The worst possible ones to select are those with an over-strict moral code, who regard even the stealing of sugar, in which we all indulged when we were little, as the most serious of crimes, and such a thing as the curiosity of a little child as to its origin in this strange world as being the most serious of moral offences. The best possible parents are those

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who try to produce a simple environment for the child, who do not make natural desires and curiosities into monstrous crimes, but, avoiding either the Scylla of "Don't do that, darling, or Mummy will be hurt," or the Charybdis of "Stop that and don't ever let me see you do such a thing again," manage to coax the child along the path of normality by a genuinely human interest in it: treating it as they would like to be treated themselves and with a wise discretion. In children educated in such a way there will be a minimum of repression, and they will have no need of the mechanisms of projection, introjection and displacement, except inasmuch as these fundamental mechanics are constructive in the human mind. Freud has been abused and neglected by lesser men, and men who will be forgotten when he remains famous, for his work for humanity. It is difficult to say how much his theories will form the psychology of the future, but anyone who has any contact with human beings, anyone who can sit still, hold his tongue, and let the other man talk, must realise the reality of the mental mechanics which he has described. If Freud had described only displacement, introjection and projection he would have been as great a man as Janet, but we shall see that he has done far more than this. He has charted the anatomy of the mind much as men in the Middle Ages started to draw pictures of the anatomy of the body. If, in a hundred years' times, his charts look a little strange and have a quaint old-fashioned air about them, it will not matter, for he was the first to show us the way that such things should be done.

CHAPTER FIVE

THE FURTHER DISCOVERIES OF THE PSYCHOANALYSTS

WE have so far examined the manifestations of the unconscious mind, and have been able to deduce its presence by the various evidence which shows that it is capable of influencing consciousness or behaviour. It will be clear that prolonged study and the correlation of a large number of cases would allow the understanding of the real nature of the unconscious and, moreover, since the memories which can be revealed can be unearthed from earlier and earlier periods of life until it is possible to obtain memories from early infancy, it will be seen that we can gain some insight into the state of the unconscious at all ages.

We have noticed that parts of the mind which are loaded with some painful emotion or which are incompatible with the patient's thinking may become split off from consciousness and so sink into the unconscious. It might be supposed that the unconscious is formed in this manner by an accumulation of dissociated memories which have become inaccessible to consciousness. It is unlikely that this is the real manner in which the unconscious is formed, and it is indeed probable that it precedes consciousness rather than vice versa. It is likely that consciousness is formed by the integration of memories, and that these memories coalesce into an ego. Nevertheless it is to be expected that we shall find a large number of dissociated memories, at least at the more superficial levels of the unconscious. Now, it has already been seen that these memories have been dissociated because they were wishes which could not be allowed into consciousness, and a minute study of dreams and other manifestations of the unconscious leaves little doubt that these wishes are either forbidden sexual wishes or else aggressive wishes.

Freud has stated that the three most terrible shocks to man's personal esteem were, firstly, Galileo's revelation that the earth moved round the sun ; secondly, Darwin's discovery of evolution ; and, thirdly, the demonstration of the real nature of the unconscious.

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The first showed painfully that the universe was not created especially for man, and the second did more—it suggested that the laws which govern animals govern men also. Now Freud has shown that behind the kindly exterior which we turn to the world there lurk in all of us those wishes, urges and impulses which we have been loath to recognise in ourselves. Let us be frank. Freud's discoveries show that we are animals, and that our unconscious is purely animal, at least in its beginning. We shall see that the environment modifies this unconscious and produces certain important changes.

An animal takes a frank pleasure in certain things which are not pleasing to the human mind. For example, animals delight in rolling in manure, and anyone who has taken a dog for a walk must admit this. Since we are also animals, why should it appear strange that we have similar desires? It is easy to imagine the "nice-minded" rising in disgust and rending anyone who dared to make such a suggestion. Nevertheless those who have watched a little child will have to admit that infants sometimes display the same gusto in smearing excrement over themselves as do dogs and cattle. Again, anyone who observes animals must see that in certain circumstances they will show considerable hostility to even their nearest relatives, and this hostility may proceed to the killing of the other animal. Would it appear so strange, then, if human beings had similar propensities? It may be against all our teaching and ethics, but nevertheless it is true that the hatred of brother for brother can be more bitter than any hatred for one outside the family. I believe that Bernard Shaw has said, with his usual acute observation, that there is only one person that a girl hates more than her elder sister, and that is her mother.

Again, we find that amongst animals there is no bar which prohibits mating within the family. In fact, it is a common thing for animal-breeders to mate brother and sister or son and mother in order to increase some wanted characteristic in the strain. The animals mate quite happily, and do not notice that there is any relationship in their mate, and never show any repugnance. Would it be so strange, then, Freud asks, if we found that the same urge is to be found in human beings? We shall find that he claims that all these things are manifested in the unconscious of the human, but, because man refuses to recognise his animality, these

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wishes have been forced out of consciousness. In studying the unconscious we are merely revealing the animal in man. It is well in considering psychology not to allow oneself to be swayed by prejudices or the beliefs which one has acquired in one's education, but to accept things as one finds them. We find man is an animal, and there is no more to be said. Nevertheless we shall find him more than an animal, but that does not rob him of his basic nature.

We now come to Freud's theory of the libido, and the transformations, or transpositions, which it undergoes.

Now, it is necessary to be quite clear about what is meant by the term libido, since it is used by Jung in a sense different from the sense in which Freud uses it. Freud uses the term libido to mean craving in its strongest connotation or interest in its weakest. He believes that the infant is born with a certain amount of this craving. His emphasis upon sex has estranged a lot of those who would have willingly accepted more of his theories, but since Freud constructed the theory, we must accept that he has full appreciation of what he is saying. He called those areas in which the craving appeared strongly the erotogenic zones. The newly born child, according to Freud, has all or rather most of its libido centred in its mouth. It has a craving to suck, and this, he insists, is sexual in its nature. Although it may sound surprising, this idea was not an original one. Long before Freud, Lindner observed the intense pleasure which children take in sucking, and had noticed the excitement which the infant shows during the process—an excitement which reaches a climax which he compared to the sexual orgasm. Further, Lindner insisted that it was not merely the food-seeking which stirred the child's excitement, since children reached the climax of excitement even when not sucking for nutriment, but merely for pleasure. This idea is so foreign to all that one has been taught about children that it is not surprising that it has met with a considerable amount of opposition. Nevertheless it seems difficult to deny that the infant does get pleasure from sucking. Nor is it only the infant which gets pleasure from sucking, but it is possible to find evidence in adults. The kiss itself, without doubt a sexual caress, is related to this, and possibly the pleasure which some people get from sucking a pipe is a residue of this stage.

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(Originally Freud described only one oral stage, but his pupil Abraham elaborated this and other parts of the theory, and as Freud has accepted it, the elaborated theory will be given rather than the original one.)

The next stage is a stage of biting. This naturally occurs when the child has developed its teeth, and it then gets pleasure from masticating its food. It must be admitted that children not only find pleasure in eating their food, but enjoy gnawing at things even when they are not edible. It is not unusual for them to be given an ivory ring to bite on, ostensibly to cut their teeth, but really to allow them to gnaw at something which they cannot harm or which will not hurt themselves. It is easy to see how closely this is related to the pleasure an animal gets from crunching a bone. Possibly the habit of chewing things—tobacco or chewing-gum, sweets or the corner of one's handkerchief—in which some people seem to find pleasure may really originate in this stage. Since the teeth are weapons of offence, it is not surprising that at this time the child develops hate. This emotion should be worked off to some degree by the mastication of food, but nevertheless we still find residues of it in adults who grind their teeth when in a rage.

The child's mother now draws its attention to its bowels, and it soon learns that an infant which is able to empty its bowels when requested is regarded as a good child, and one which does not do so, but empties its bowels at inconvenient intervals, is regarded as bad. We find that the child's interest shifts from its mouth, where biting has replaced the pleasure of sucking, and now its pleasure zone or its erotogenic area is to be found at its anus. The infant is believed to get pleasure from the expulsion of its motions. This again is comparable to an animal, which certainly gets a feeling of pleasure from the passage of excrement.

The libido thus becomes modified, inasmuch as the child is now encouraged to control its excrementory functions. It gets pleasure in retaining rather than passing its motion. Perhaps an adult example of this pleasure is to be found in the reluctance which some people have to emptying the bowel.

Before passing on to the next stage, it is worth pointing out here that Freud noticed other manifestations than these in young infants. He described that children enjoy exhibiting themselves

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and running about with nothing on. Again, they seem to get pleasure from looking at other people when they are undressed or undressing. They also enjoy hurting others, and again, strangely, in having pain inflicted on themselves. This latter may sound extraordinary, but children frequently knock their heads against the side of the cot again and again, and it is difficult to see why they should do this unless it provides them with a certain amount of pleasure.

It is worth while noticing that a certain amount of the hate which we found generated in the oral stage when the teeth had developed tends to persist through the anal stages, so that they, too, are associated with hostility.

The infant now shifts its craving on to its genitals, and obtains pleasure from stimulating them. It is probable that the normal way of discovering sexuality of a more adult kind is through masturbation, and it is very important that this should be recognised, and that this act be regarded as a trivial example of undevelopment rather than as a heinous sin.

The next stage is when the child is able to love an object, and no longer gets its pleasure from itself. Its sexuality is now adult. Freud stated that the infant was "polymorphically perverse" because it obtained its sexual pleasures in a multitude of perverse ways. However this may be, there is no doubt that his theories do explain perversions better than any who preceded or came after him. He said that the child when it was obtaining its pleasure from stimulating itself—whether orally or anally or by masturbation—was autoerotic.

It is quite probable that now one might object and say in indignation that no one has memory of passing through these stages and that the whole matter appears to be nothing but stuff and nonsense. I have every sympathy with this point of view, but anyone who expresses it must realise that we are discussing the unconscious and the conception of its growth which has been built up by numerous elaborate studies lasting years, in which every hole and corner of the patient's mind has been explored. One has no hope of remembering the growth, any more than one has any hope of remembering how one grew from a mass of minute cells into a human embryo.

In the previous chapter on Freud it was pointed out that the

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mechanism of introjection was that of taking in things which appeared pleasant to the child, and which it loved, and identifying itself psychically with those things. On the contrary, projection was the extrusion of things which were unpleasant, which were hated, and these things were attributed to the surrounding world. Now, this psychological machinery occurs at the same time as the similar bodily process is proceeding. The child tends to introject at the oral stage when it is exercising its teeth, and to project at the anal stage when it is taking pleasure in the extrusion of fæces. We shall see how important Freud regards these processes as we proceed.

We now come to the far-famed Œdipus stage, about which such battles have raged. When the boy has passed through the auto-erotic stage, and is able to love an object apart from himself, he naturally fixes on something in his immediate neighbourhood—inevitably his mother. The child now loves his mother with a terrific intensity, and selfishly demands all her love in return. But it is evident that the mother belongs to someone else. Even though the child is small—and all these stages are passed through before the age of six—it realises that it is its father who possesses its mother. There is, according to Freud, little doubt that its love for its mother has a strong sexual component, and that its hate for its father is so strong that it would kill him if possible. The child has come to regard its father as a rival, and would treat him as such.

One might at this point expect to hear again the indignant interruption that no one remembers wanting to murder his father and to marry his mother, but again it must be pointed out that these things are unconscious stages through which the child is passing, and that it is impossible to remember them, since any memory will have been repressed. Nevertheless it is, not unusual to notice some manifestations of the Œdipus complex in children. For example, a patient of the writer's said that he was abroad when his youngest child was born, and did not return until the little boy was about three years of age. The child greeted him with unconcealed hostility and strongly resented the love which his wife showed for him.

Freud points out that there must be a universal desire to commit incest, since there is a penalty against it, and it is only necessary

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to have this for things which people have a desire to do. If no one desired to commit incest, no penalty would be necessary.

According to him, the child fears that the father will castrate it as a punishment for loving its mother and hating its father. This sounds like the crowning absurdity, yet one must be careful before one scoffs at him. This is shown by the fact that on the day when this paragraph was written the writer saw a patient who went abroad in order to find a surgeon who would castrate him, so that he might be freed from sexual feelings which he considered to be unclean. It would take a long analysis to find out whether it was fear of castration which made this man decide to punish himself and so forestall punishment, much as a murderer will shoot himself rather than be hanged. Again, I have encountered mental patients who have had a terrible fear of emasculation, and one particularly who thought that this would be performed on him, so that he struggled against the dentist who, he thought, was not a dentist at all, but a surgeon making ready to do this operation. It is well, then, to realise that there are a great number of facts which support Freud's apparently fantastic conclusion. When we turn our attention to savage thought, we shall find that the savage has similar ideas. Freud believes that anxiety originates in the difficulty which the child has in breathing during the process of birth. It is exacerbated by weaning and the loss of the comfort of the breast, and manifests itself in the fear of castration at the Oedipus stage. Each of these situations is characterised by the loss of some prized object and is symbolised by castration.

Although it is difficult to be certain about the castration complex, there is one thing about which we can be certain, and this is that the child while it is loving its mother excessively introjects her, and so is psychologically feminine. The child is now homosexual, since it has identified itself with its mother. There is little doubt that the basis of psychical homosexuality is to be found in this identification, and anyone who has had a chance of observing a boy who has been brought up in a purely feminine atmosphere, or who has an unsatisfactory father, must have noticed that such a boy tends to acquire a feminine manner.

The question might well be asked, How does the infant adjust itself to the emotional difficulties produced by the Oedipus situation so that it can reach normality and "grow up" emotion-

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ally? The child which successfully resolves its Oedipus complex does so by overcoming its hostility to its father and loving him as well as its mother. It is then able to introject him and change from homosexual to heterosexual interests. In common parlance, it is able to mould itself on its father.

What are the results of a failure of normal emotional development? The consequence is a tendency towards neurosis or perversion. The individual finds that he is unable to obtain pleasure in adult sex life, and harks back to the previous stage when he did obtain it. This may sound absurd, but there is a great deal of evidence for the theory.

According to Freud, the cause of these "fixations" or emotional blockages is that the child obtained too much or too little pleasure at the stage when the fixation occurred. It is for ever seeking to regain the pleasure which it had or felt that it should have had. It is this craving which Freud calls "libido." If an infant gets excessive oral stimulation during the period of, let us say, sucking, then it will have left a certain amount of craving or libido at this stage. If it gets too much or too little pleasure at a stage, it tends to invest this stage with libido. This means that the child may either never develop past this emotional stage in a satisfactory manner—for example, it may stay homosexual if it has a mother-fixation—or else, if it does develop past it, there will be a tendency to revert to the stage at which it is fixated if it finds any obstacle in its development. Freud compares the emotional development of a child to an army invading a foreign land. The army will leave garrisons of soldiers in the big towns and proceed until it occupies the capital. Should it meet with any strong opposition it will naturally retreat to the last big garrison. In the same way we find the libido tending to regress. Most of these theories which sound so difficult are really easy to understand if one has a definite example. The following may make this idea of regression of the libido clear. The writer was consulted by a young man who confessed with horror that he was falling in love with men. He had apparently been sexually normal, or heterosexual, until he was twice rebuffed by girls with whom he fell in love. He then ceased to mix with people socially and lived solitarily. He took an interest in a young manservant, and, since he was so lonely, he gave this man more freedom than was usual with a servant and

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went about the country with him. He imagined that he was doing this from pure philanthropy, until he discovered that he was in love with this man. Now, what had happened? The patient had developed to normal heterosexuality, but the rebuffs which he experienced made him revert to a homosexual stage. It was found that he was fixated on his mother. He was treated, and went away happily heterosexual.

Freud found that various nervous illnesses tended to coincide with fixations at the different stages and, as a rule, the earlier the fixation the more difficult was it to cure the patient. Hysteria tends to occur with fixations at the Œdipus stage, and it is usually easy to find evidence of homosexuality in the unconscious minds of hysterics. For example, a girl who complained of various aches and pains, including a severe headache, which gravely interfered with her work, was found to be strongly attached or fixated to her father, and completely lost her symptoms when she was able to get rid of the emotions she felt for him. It would be easy to give examples of fixations at all the other stages, and a good case which showed the astonishing interest which patients with anal fixations take in excrement is shown in a dream which one such patient had. He dreamed that he was in a large store and saw a man kneading some dough. He seemed to be making ale. He was putting it in a keg which had excrement in the bottom. It did not seem repulsive, but necessary to make the ale more tasty! The patient who dreamed this showed evidence that he was fixated at a homosexual stage, since when he was ill he thought that he was a woman pregnant with a boy child. Patients with a fixation at the oral stage are sometimes seen who, like a patient recently successfully treated by the writer, get sexual excitement from suckling the teats of an animal. Again, the writer has treated a man who obtained sexual pleasure from sucking a baby's "dummy" or a feeding-bottle. There is no doubt that these patients were suffering from emotional fixations. This, however, does not prove beyond all doubt that the neuroses from which they suffered were necessarily caused by these fixations, although it appears probable that this was so. It will be seen that whether or not one agrees with Freud's theories, there is a large basis of facts upon which they are erected.

Moreover, it must be remembered that Freud spent eight to

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ten hours a day for about *forty years* studying the unconscious minds of patients. It is well to consider one's own experience before criticising such a man.

THE STRATA OF THE NORMAL MIND ON THE BASIS OF FREUD'S THEORIES

CONSCIOUSNESS						
UNCONSCIOUSNESS						
<i>Brothers and sisters</i>	+	+	+	+	+	+
	+	+	+	+	+	+
<i>Father</i>	-	+	-	+	-	+
	+	+	+	+	+	+
<i>Mother</i>	-	-	-	-	-	-
	+	+	+	+	+	+
<i>Phallic</i>	+	+	+	+	+	+
	-	+	-	+	-	+
<i>Urethral</i>	-	+	-	+	-	+
	+	-	+	-	+	-
<i>Anal</i> {	Controlling	+	-	+	-	+
	Expelling	-	+	-	+	-
<i>Oral</i> {	Biting	-	+	-	+	-
	Suckling	+	+	+	+	+
PRENATAL EXPERIENCES						
						LOVE = + HATE = -

We are now in a position to consider Freud's views on¹ the structure of the mind, and it must be remembered that we are not dealing with matters of fact, but of theory. Nevertheless the

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theory, like all of his work, is based on experience, and is very hard to controvert. Freud believes that the child starts in life without a conscious mind. It starts with a store of instinctual energy, and it is this energy which forms the libido. As the child comes into contact with reality (that is to say, with objectivity), it develops its memories—its ideas linked with emotion—into an ego. This ego has the function of consciousness, and its purpose is to test reality. Before the development of this ego the child is purely pleasure-seeking. Its one aim is to satisfy its cravings in the most pleasurable way possible, and it takes no cognisance of reality when it is first born. One of Freud's strongest supporters, a physician of Budapest, Sando Ferenczi, has made a fascinating study of the child's discovery of reality. Ferenczi thought that the tiny child passed through four stages. Firstly, it felt that it was omnipotent, since all its wants were fulfilled as soon as it wished them to be. Later, however, it felt that it needed to make some magic gesture—a cry or to wave its limbs about—to produce the desired effect, since its wants would not always be satisfied if it just wished. The next stage was one in which it felt that everything was alive and possessed a spirit. The final stage was one of complete understanding of objectivity. It is of interest that we can find evidence of these stages in the thinking of the insane and in superstitions, as in the magic gestures used by simple people such as the Neapolitans to ward off the evil eye. In fact, all magic is a type of similar thinking and is a residue of this stage of development.

The child has now developed a consciousness of its surroundings, and this function is to be found in the ego. The development of the ego is a great advantage to it, since now it is possible to modify its behaviour in accordance with reality and so avoid future pain. It must not be thought that the growth of the ego is instantaneous—its growth is a slow and rather painful one, and coincides with the onslaughts of the external world, which cannot be ignored. It might be felt that now that we have described the ego and the unconscious (or id), we have defined the complete psychic structure. This is not so. The id receives all those ideas which are dissociated or repressed from the ego. We have noticed in the previous chapters how this occurs. But it receives more than this. We have noticed how the parents are introjected in the various stages. This introjection forms a psychic structure which

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Freud calls the superego. Now, it is the superego upon which our unconscious ideas of right and wrong are formed. Its quality depends entirely upon the nature of the parents which have been introjected. A stern, harsh parent will produce a stern and harsh superego. It is quite possible that someone who has been struggling with these difficult conceptions might lose patience now and say, "What in the world do you want to have a superego for? Haven't we got enough ideas already to juggle with?" It is hoped that it can be shown that the conception of the superego is a very valuable one. Firstly we can now understand the power or force which acts as a censor in dreams and represses ideas which disappear from consciousness, or prevents certain ideas from entering consciousness. This force is not a conscious one. Therefore we know that it is not to be found as a part of the structure of the ego; it must therefore be in the unconscious. We know that our conscious ideas of right and wrong are derived from our parents, so why should our unconscious ideas of right and wrong not be derived from the same source? The superego is to be understood as an unconscious "conscience." It was in speaking of the superego that Freud said that man is both more immoral and more moral than he knows. We can now see much more clearly the origin of symptoms. In the production of a symptom we have a primary urge coming from the id. If this urge were compatible with the superego it would have been allowed to pass into consciousness and be satisfied. But every urge or desire is scrutinised by the superego, and if it is not one which is permissible to it, then the superego does its best to prevent it becoming manifest. The poor ego has nothing at all to say about all this, but it feels the result of the contest as a symptom. In the previous chapter I discussed as an example of displacement the case of a young butcher who developed a fear of knives when he was insulted by the inspector of the store in which he was manager. If we examine this case we can see clearly what has happened. This man's id produced the urge to kill the manager with a knife. This urge was one which the superego would not permit to enter consciousness as such, and the superego therefore prevented any possibility of this act being translated into reality by making the knife fearful to the patient. He was not analysed, but if he had been it is quite possible that much more evidence

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could have been obtained. For example, the inspector who angered him probably symbolised his father. It will be seen that the ego has no control of the symptoms at all and, in fact, Glover says that the ego in relation to the id is like a baby riding on an elephant. The ego thinks that it steers the id and controls it, but in reality the elephant goes its own way. It is obvious, therefore, that the superego is a valuable social force, but that to have a superego which is too harsh and which restricts the id too severely is to risk grave neurotic symptoms. We can see that parents who are for ever saying "Don't" to the tiny infant are asking for it to develop such a severe superego as to hardly fail to become neurotic. It might be inquired, If we have this psychic structure developed, what can we do about it to prevent the formation of neurosis or to treat a neurosis which has developed? The answer is simple. There is only one way in which we can modify unconscious mechanisms, and that is to make them conscious. If the patient can be treated, and he free-associates on his parents until the memories which form the superego are brought to consciousness, then that structure will be modified. It is only in consciousness that things can change—in the unconscious we enter a changeless and timeless pleasure-seeking world which is guarded by a Cerberus in the shape of the superego. Once we can drag the superego into the light of day, we can modify it and make it a more kindly and sensible guardian.

This theory of the superego explains a number of things. For example, in certain cases of insanity which Freud believes to be produced by very early fixations, so that a patient is polymorphously perverse, we find that actions may be performed which would never be thought of by normal people. This is because the patient has either been fixated at a stage before the formation of the superego or has regressed to such a stage. There is no guardian of the unconscious to prevent any or every wish from penetrating consciousness. Thus such patients will smear themselves with excrement, hurt others for pleasure, expose themselves shamelessly and so on, just like a tiny infant. They have no superego to prevent them doing this.

It will be appreciated how futile is the advice which is usually given to the neurotic, "to pull yourself together, brace up" and so on—the neurotic cannot pull himself together, because the factors

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which are causing his illness are beyond his control. We can go beyond this and say that the more the neurotic tries to suppress consciously his symptoms, the more will he tend to increase the unconscious conflicts, and the stronger will the symptoms become.

If the superego is not able to prevent the manifestations of the id and prevent gratification of the forbidden impulses, it can still wreak its revenge on the patient by making him have a terrible sense of guilt, and sometimes compel him to do something for self-punishment. The patient who voluntarily submitted to castration because of his feelings of sexual guilt was probably driven to do so because of the harshness of his superego. Again, the girl described previously who complained of various aches and pains, and who was attached to her father, suffered from these pains because her superego inflicted them: she was re-creating an infantile situation, and hating the children of whom she was taking care, and so using them as symbols for her brothers and sisters. It might be supposed that the superego of criminals would be very poorly developed, but this is not always the case. It has been found that in some criminals there is a feeling of guilt which is so strong that they feel compelled to commit some crime in order to be punished. This sounds absurd, but when one sees that after a murder such as the "Blackheath murder" a number of persons gave themselves up as having done it, one must admit that there is a considerable number of people who feel a need for punishment, even though that punishment is hanging! It is all the more likely that there are people who feel in great need of punishment since the superego treats a wish like a deed, and punishes the mere desire just as severely as though the act had really been perpetrated.

We must now consider facts which Freud has used to support his theories, and which come from sources where they cannot be said to have been distorted, as the opponents of analysis insist they are, in the process of analysing a patient. These are the facts obtained by the study of savages. It is probable that in studying the behaviour of little children we get closer to the unconscious than in studying the behaviour of adults, and similarly in examining races which are more primitive we shall obtain facts which are less distorted than those products of more highly civilised people. We shall find when we deal with Jung that he made great use of the

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mythology of primitive races, and Freud was quite justified, therefore, in supporting his theories by facts derived from primitive religion in the form of totemism. Wittels is inclined to think that Freud made his study of totemism rather as a revenge on Jung, who had left the psychoanalytical fold to start a school of psychology of his own. I am inclined to doubt this, since there was no recrimination between Freud and Jung, such as occurred when Adler broke away. Moreover, anthropology offers such a wealth of material that sooner or later Freud must have been attracted to examine it.

One of the greatest objections which Freud aroused by his theories was his insistence on the Œdipus complex. Almost everybody who has written against him has strongly objected to the Œdipus complex, and it is this which arouses the strongest horror in his opponents. Freud does, of course, insist that this horror is really the result of the repressed Œdipus wishes which the objectors harbour and, naturally, this rouses them to still greater anger. One might ask, then, what is the position regarding incest in savage communities. Does mating within the bounds of the family occur as it does between animals without any restriction, or is there a strong barrier against such a thing? We shall see that the latter is the true position.

Amongst the aboriginal Australians the totem replaces all religious and social institutions. The tribes are divided into smaller clans, and each takes its name from the totem. The totem is usually an animal or more rarely a natural force, such as the wind, or else a plant. The totem is believed to be the ancestor of the clan. The members of the tribe are strictly forbidden to eat the animal which represents their totem, because to do so would be the equivalent of eating their progenitor.

All the children of a marriage take a totem. In some tribes it is customary to take the mother's totem, and in others it is usual to take the totem of the father. Suppose that, as Freud points out, a man who belongs to the Kangaroo totem marries a woman who is of the Emu totem, then the children, both girls and boys, will be all Emus. "According to the totem law, incestuous relations with his mother and his sister, who are an Emu like himself, are therefore made impossible for a son of this marriage."

This fact is truly remarkable, and is very strong support for

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Freud's views regarding the unconscious desires which he says everyone cherishes regarding incest. Still more so is the curious custom which many savage races have, for example in Melanesia, regarding the relations of brothers and sisters. When brothers and sisters reach puberty they must avoid each other, and this avoidance is also noted between mother and son when the latter is nubile. Some races have similar prohibitions regarding the relations of son-in-law and mother-in-law. Freud suggests that this is because of the danger of the son-in-law identifying his mother-in-law as a substitute for his mother, and so regarding his wife as a sister, with the result that he would develop "guilt-feelings" and his marriage be made unhappy. There is, on the other hand, the danger that the mother-in-law should identify herself with her daughter, and so fall in love with the son-in-law. Freud suggests that the tendency which civilised races show with regard to the making of jokes and witticisms about mothers-in-law is based on this emotion.

He sums up the whole matter of taboos when he says that "the basis of a taboo is a forbidden action for which there exists a strong inclination in the unconscious." This matter of taboos is an ambivalent one—it is both desired and rejected. The savage shows a similar feeling towards his rulers, and Freud says, "These savage kings are endowed with a wealth of power and an ability to bestow happiness which only gods possess; certainly in later stages of civilisation none but the most servile of courtiers would play the hypocrite to the extent of crediting their sovereigns with the possession of attributes similar to these. His people have to thank him not only for rain and sunshine, which allow the fruits of the earth to grow, but also for the wind which brings the ships to the shore and for the solid ground on which they set their feet."

These kings, who have such terrific powers in the eyes of their subjects, have to be guarded against equivalent dangers, and the ruler is so hedged round with taboos that his life must be a misery. For example, the Mikado of Japan was not allowed to walk, expose himself to the open air, allow the sun to shine on him, nor was he allowed to cut his hair, nails or beard. He was not allowed to wash, but it was permissible to cleanse him while he was asleep! All this would appear nonsense did we not know that the king is a

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symbol for the father, and hence the terrific powers, since the tiny child feels that his father is endowed with supernatural, or at least superhuman, powers. But why is he guarded with such care, and why is everything about him so precious that not even the sun is allowed to shine on him, nor water wash him while he is awake? Freud suggests that this exaggerated care really conceals an unconscious hostility. This explanation is probably true, since we frequently find that an excess of care really conceals an unconscious hostility. As Shakespeare says, "The lady doth protest too much, methinks."

It will be remembered that we thought that the tiny infant must believe that it was omnipotent when it had all its wants satisfied as soon as it wished them to be. We meet this attitude in fairy-tales, where the thing is no sooner wished than done. We find that this omnipotence of thought permeates the whole of the savage's ideation. The belief in spells and talismans which play such an important part in primitive thinking is based upon this principle. Freud believes that the spirits, goblins, devils and so on with which the savage populates his world really consist of projections from his own mind, just as we find the insane patient projecting his evil wishes so that everyone in the world seems to be trying to make out that he has committed some sexual crime. It is probably for this reason that evil spirits are always much more real and terrible than good spirits, which form a very lukewarm counterpart.

We see, therefore, that primitive man behaves in his manner of thinking very much as the neurotic—in fact, they both think in accordance with the same laws.

A theory which coincides remarkably with Freud's views was put forward by Charles Darwin, and, naturally, Freud makes the most of it. Darwin concluded from a study of the higher apes that in the very earliest time man lived in small hordes, much as apes do now. He says, "We may indeed conclude from what we know of the jealousy of all male quadrupeds, armed, as many of them are, with special weapons for battling with their rivals, that promiscuous intercourse in a state of nature is extremely improbable. . . . If we therefore look back far enough into the stream of time, and judging from the social habits of man as he now exists, the most probable view is that he originally lived in

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small communities, each with a single wife, or, if powerful, with several, whom he jealously defended against all men. Or he may not have been a social animal and yet lived with several wives, like the gorilla ; for all the natives agree that only the adult male is seen in a band ; when the young male grows up a contest takes place for mastery, and the strongest, by killing and driving out the others, establishes himself as head of the community. The younger males being thus driven out and wandering about would also, when at last successful in finding a partner, prevent too close breeding within the limits of the same family."

We have in this the savage counterpart of the neurotic's desire to supplant the father, and one cannot help being impressed with the curious similarity of the behaviour of young apes and the neurotic wishes.

Freud has elaborated this theory in a most ingenious manner. It has already been noted that members of a totem are forbidden to eat the animal represented by the totem. This is true as a general rule, but there are occasions, however, when these rules are abandoned and the members of the totem all assemble and eat together the totem animal with great ceremony. Now, we noticed that the totem animal really represented the tribal father. We might well ask ourselves, Whence comes this curious custom in which the members of one family all assemble to eat their ancestor ? Freud suggested the origin of this custom very ingeniously. He says that when the jealous father had driven the young brothers out of the horde, just as we find the young apes were expelled, they banded together. As he says, " One day the expelled brothers joined forces, slew and ate the father, and thus put an end to the father horde. Together they dared and accomplished what would have been impossible for them singly. . . . Of course, these cannibalistic savages ate their victim. The totem feast which is mankind's first celebration would be the repetition and commemoration of this memorable, criminal act with which so many things began—social organisation, moral restrictions and religion." All this is theory, but how beautifully it explains and unites the neurotic and savage modes of thought ! Freud suggests that this primal murder was afterwards regretted by the sons, and the guilt produced prevented their enjoying the incest which prompted the deed, and stopped further killing. He suggests that this is the

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origin of the guilt attached to murder and incest. Freud has again found man more immoral and more moral than he knew !

It has been unnecessary to adapt these theories to everyday life. They have attracted the novelist and the dramatist, who have utilised them to educate the man-in-the-street. Now that the universal gasp of horror with which Freud's discoveries were first greeted has died away, they are being quietly assimilated and are forming a basis of life and conduct. It would not be extravagant to suggest that the freer and healthier mode of modern life, with its franker moral code, its emphasis on the exposure of the body to the sun and air, and its freedom of speech and conduct, is the result of Freud's teaching. It is hoped that never again will we muffle our bodies in the stuffy coverings of the Victorians, nor will we stifle our intellects in intellectual antimacassars as they did. Freud has insisted that nervous illnesses are due to a wrong culture which causes repressions, and we are now passing through a period where we are attempting to adjust our culture to produce a more sensible mode of life and so abolish the neurosis or, at least, reduce its frequency. Anyone who saw "The Barretts of Wimpole Street" can appreciate how neurosis is produced by a wrong mode of life. Not only does it produce it in the parents, but they in their turn cannot fail to induce similar illnesses in the children. It might be said with justice that one neurotic makes many, and anyone who has had an opportunity to study the devastating effect which a neurotic parent can have on a family will appreciate this. Neurosis is, therefore, a vicious circle in which parents automatically produce the environment most suitable to produce it in their offspring. They in their turn arrange a similar environment to make *their* offspring neurotic, and so it goes on. What can we do to stop the continual production of neurotics ? We can attack this problem in three ways. Firstly, the way we have discussed—that is, the alteration of the general mode of culture into a more sensible one : the abolition of hypocrisy and the encouragement of a healthier way of living. Secondly, we can persuade those who are contemplating marriage but who are suffering from neurotic illnesses that they should be treated before they have children, or, better still, before they are married. By doing this we shall have happier marriages and healthier children. The last way is just as important—that is, in seeing that the teachers are not suffering from

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neurotic illness (teachers are very prone to this type of disease), and that they have a good knowledge of how to treat children in order not to produce neurosis. Every psychologist must have encountered cases in which the symptoms have been exacerbated by the wrong treatment of the nervous child, and it might be said that a neurotic teacher is second only to a neurotic parent in the production of nervous illness. It might be stated in passing that a very potent cause of neurosis is a narrow and unyielding religious atmosphere. If one lives in an environment where everything is a sin, then it will be almost impossible not to acquire such a sense of guilt that even the hardest will develop feelings of inferiority. The modern tendency to persuade children to behave by an appeal of reason, rather than by a threat of hell fire, is a sensible and healthy one. Above all, the child should be brought up to regard sex as natural and even beautiful. Those who are brought up to regard it as something unclean and sinful are going to run a grave danger when their emotions start to battle with their education.

We have, in the previous chapters, criticised and evaluated the discoveries which were discussed. What shall we say of relentless Freud, who, at the age of eighty, still toiled away eight hours or even ten hours a day at the problems of mental and nervous disease? Whether we are hostile or friendly, we cannot but admire his energy and the marvellous discoveries which he made. He came when the theory of dissociation was just becoming known and when Janet himself was still comparatively a young man. He has far surpassed anyone who preceded him. His discovery of free-association has opened the doors of the unconscious so that we can look within. It has provided a method of treating an illness which was previously palliated by stunning the patient with drugs. Freud has taken the dream and shown that behind its Heath Robinsonian exterior there lies a real meaning which fits in with the patients' symptoms and which bears a close relation to those racial dreams which we call myths and legends. He has discovered the mechanism of wit and revealed its relation to the dream structure. He has studied primitive religion and noticed its similarity to the products of the neurotic. He has explored the unconscious and has studied emotional development of the human being from infancy to old age. He has mapped the outlines of the human mind and named what he has found. This has

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provided us with a terminology which is of great assistance in the discussion of psychological medicine. If we limit ourselves to psychoanalysis as a method of treatment, we find that there are a number of things to be said both in its favour and its disfavour. Firstly, as we have said, exploratory treatment is the only radical cure of neurosis, and brilliant results can be obtained by its use. It literally creates a new personality. When it succeeds it is incomparable. Hypnosis or any other method of treatment for neurotic patients is merely dabbling with the problem in comparison with analytical psychotherapy.

But what of the other side of the picture? It must be admitted that analytical psychotherapy is very prolonged and tedious. A treatment will usually take months, and it may last years. (It must be granted that often good results are produced by a superficial analysis of two or three months, but this is not true Freudian analysis.) Treatment is expensive, but not more so than might be expected, since it necessitates a great deal of time being devoted to it by the specialist. From the practitioner's point of view it is not lucrative, and in no other speciality is it so hard to make a good living. It is very difficult indeed for a poor patient to devote such a long time to treatment, and even if the treatment is free, or almost free, poverty makes the application of it difficult. There is one objection which is often produced against analysis, and that is, that it destroys the patient's ideals. I do not think that this is valid, and it is easy to answer this objection by asking what is the reason for ideals and what is their value. It is obvious that ideals are to enable one to live correctly and fit in happily with one's fellow-men. But that is just what the neurotic never does. If this is so, then the sooner his ideals are destroyed the better—then he will be able to form some which are of more value in the conduct of life. One need not answer the comments and criticisms which are directed against the emphasis which Freud has made upon sex. If the neurotic's illness is caused by sexual maladjustment, then why not put it right? If he had a stone in the bladder or hæmorrhoids, we should not hesitate to treat him because of the unpleasant nature of his illness. Let us extend the same spirit to psychological medicine.

There is one branch of psychiatry which is the direct offshoot from Freud's work and which has not been touched on before, and

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that is child analysis and child guidance. It is on this that great emphasis has recently been laid. The most surprising thing in the world is the way in which young children will respond to a change of environment and a little assistance over their emotional difficulties. If only all children could be observed when they were in the process of forming a neurosis and treated at once, it would be safe to say that the incidence of this type of illness would be reduced enormously. This is being done to a great extent by the schools where the children have a regular medical examination and the teachers have some psychological knowledge. The children who stammer, who have nervous movements, night-terrors, sleep-walking, naughtiness, thieving and so on, can often be cured in a few weeks if they are treated as children, whereas they will take months or years as adults. Much of the work of those who have analysed little children has confirmed Freud's conclusions from the analysis of adults. Recent research done in America strongly suggests that it is possible to reduce the cases of insanity, or at least prevent the development of it. Some American observers inquired at the schools from which known cases of insanity came how the children behaved while at school. The teachers were ignorant that the children upon whom they were reporting had become insane. In 50 per cent. of the cases it was found that the patients had showed some aberrant behaviour or peculiar trait of character which should have acted as a warning that they were not normal. It is highly probable that if these children had been treated then their illness could have been prevented. It would not at least have been allowed to develop unhindered. Suppose that of these children it was possible to save half from mental illness, then it would have saved the country £5,000,000 annually, since the cost of maintaining the mental hospitals in England is £10,000,000 per annum. Besides the mere monetary considerations, it would have prevented a wealth of human misery which only those who have worked in a mental hospital can appreciate.

CHAPTER SIX

ADLER AND THE POWER INSTINCT

WHEN Freud was fighting his first bitter fight against the ignorance and prejudice of the Viennese medical profession, and later on against the massed prejudice of the whole world, he was supported by an able Viennese physician, Alfred Adler. Adler had already won a certain amount of distinction, and it must have needed no small courage to join a movement which was receiving almost universal condemnation. Although Adler embraced psychoanalysis, the mantle of analyst (in the Freudian sense) never sat very comfortably upon him. He was too preoccupied with his own conceptions, and he was working out his theories in the centre of the Freudian movement. During these earlier days of psychoanalysis Freud had laid a much stronger emphasis upon sexuality than any other cause for neurosis. He recognised, of course, that individuals showed hostility to others, but this was, for him, due more to the fact that the hated ones stood in the way to the fulfilment of sexual desires, and not for any other reason. Adler was developing a theory which tended to emphasise the aggressive side of human nature and to disregard the sexual side to a great extent. He tended to regard the unconscious, upon which Freud was building such complicated and intricate theories, as being merely "the not understood." Adler abandoned the historical line of progress which started with Mesmer's discovery of hypnotism, led through Janet to dissociation, and opened the way to the Freudian conception of the unconscious. His theories were incompatible with the psychoanalytical tenets of that time. At last it became evident that he was becoming too heterodox to be safe, and Freud asked him to read a paper before the Viennese group to give a detailed exposition of his views. In 1911 Adler agreed to do so, and was allotted three of the Wednesday evenings for his exposition. He hoped that his theories would be accepted. On the fourth evening there was a discussion turning to a general attack

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upon him which Wittels says had the appearance of being planned. After this Adler and a number of followers separated and formed a society of their own. The breach between them is said to have been widened by Freud forbidding his followers to attend a lecture given by Adler.

Adler's secession must have been a bitter blow to Freud, since he had been made president of the Vienna group and had held an important place in the Psychoanalytical Society. Adler never attempted to deceive Freud by the pretence that he valued the theories of the unconscious highly, and Freud seems to have noticed this, for he remarks, "When I had recognised Dr. Adler's slight talent for the estimation of unconscious material, I expected that he would know how to discover the connections between psychoanalysis and psychology and the biological bases of the impulses, a discovery to which he was entitled, in a certain sense, through his valuable studies about the inferiorities of organs." The studies regarding the inferiorities of organs which Freud mentions were Adler's first important production and, doubtless, discoveries which were worthy of the closest attention.

As early as 1907 Adler described the influence of what he called "organ inferiority." This might occur as a familial tendency or a proclivity in one individual. If it occurred as a familial tendency, one might find that a whole series of members of the family suffered from disease which attacked one organ. For example, Adler noted that in one family the kidneys and urinary apparatus would be the organ affected, so that the grandfather might be found to have died from tuberculosis of the kidney. The father suffered from stones in the bladder, the brother had cancer of the kidney, and the patient himself suffered from bed-wetting. Adler would point out that in this family the weak point was to be found in the kidneys and urinary apparatus, so that any infection or disease tended to attack this point rather than elsewhere. There is no doubt that there is a considerable amount of evidence to support this view, and such a thing as the fact that left-handedness is often found to run in families (or probably Adler would say, a right-handed inferiority) is undeniable.

When organ inferiority is an individual tendency one might expect that disease would localise in the inferior organ, as Adler describes, since it is not unusual to find that inferior or damaged

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organs succumb first when the organism is infected. A child, for instance, may be born with damage to the heart-valves. This may be a maldevelopment due to some inborn cause. It is known from experience that infective processes will tend to attack such valves while the individual is still a child. When the patient become adult more serious infections will involve the valve, so that it will be so damaged in the end that it will result in the patient's death. Again, one sometimes encounters a patient who has a regular series of troubles all localised along his alimentary tract. Starting with appendicitis, he is operated on for this. Then, no sooner is he recovered, than duodenal ulcer appears, and is the cause of a long treatment ending with chronic colitis and so on.

Adler also believes that it is possible for an inferiority to affect the whole of one half of the body, and there is little doubt that this can occur. The writer knows of a case of a woman who has on the left side no kidney, ureter, ovary, Fallopian tube, or normal left half of the womb, where the right side is perfectly normal. Curiously enough, she is left-handed and has migrainous headaches which affect the left side of her head! Every physician who has had an opportunity of watching the development of children must have seen cases in which the children have been more developed on one side than the other. Such children usually grow more symmetrical in time, but this might show a latent inferiority on the side which was retarded in growth. There have even been cases recorded in which a disease due to the circulation of glandular products in the blood has affected one side of the body rather than the other, and this surely must suggest that the two sides were different in some way.

Segmental inferiority is really related to the inferiority of one organ. It must be understood that the body is developed from segments—just like those which are found in a worm. The front segments form the head and brain, the neck segments form the neck and the arms and so on. Now, it is not unusual to find that one segment is affected by an inferiority—as though it had been spoiled in the making. We find the nævi, or port-wine stains, which are seen so frequently on the face, are often accompanied by similar dilatations of the blood-vessels on the coverings of the brain. This would indicate a maldevelopment of the head segments of the body.

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It must not be concluded that it is only one organ which may be affected by inferiority. There is no reason why the patient should not have, let us say, inferiority in his brain and spinal cord, producing a tendency to succumb to infections of the nervous system, together with an intestinal inferiority and so on.

There is little doubt that when an organ is deficient (whether by congenital maldevelopment or by damage from disease) the natural tendency of the body is to compensate for the damage. For example, if there is a damaged valve in the heart, the heart will tend to become larger and the muscles grow stronger, in order to do the extra work demanded to make up for the leak in the valve. Exactly in the same way, when one kidney is destroyed, then we find a development of the other kidney, in order to do the work which is thrown upon it by the deficiency. Adler says that this compensation can go on until it reaches a degree which is detrimental to the organ. For example, his pupil Wexberg says, "The process of compensation often exceeds the objective and becomes over-compensation. The scar formed after an injury is thicker than the normal skin, but its elasticity is less, and it is incapable of withstanding certain other injuries. In some heart diseases the hypertrophied organ is twice the normal size, but such tremendously hypertrophied hearts are incapable of fulfilling their tasks. In other words, over-compensation is often less valuable than mere compensation; but this is not strange when we remember that only a defect so severe that compensation by normal processes was excluded would require *over-compensation*."

Adler has pointed out that this over-compensation is not necessarily limited to the organ itself. It also produces what he calls the "mental superstructure." This is so successful that it results in the final superiority of the organ rather than allowing it to remain inferior. For instance, a child found great difficulty in learning to read, write or understand any symbols, so that she was examined and found to be suffering from a congenital word-blindness. It was discovered that her sister had suffered from a similar condition. This sister had eventually overcome her difficulty, and when she left school she chose to become an accountant. She was remarkably successful at this, and now handled with ease the symbols which had caused her so much trouble as a child. It

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was as though the mind, realising its inferior tool, forced itself to use it constantly until it reached perfection.

Adler quotes Beethoven as a similar case. This composer became deaf at an early age, and his deafness is known to have been caused by an inherited disease. Nevertheless the deafer Beethoven became the more prolific and the more beautiful was his work. He was over-compensating for his deafness by producing beautiful things to hear. Another case of over-compensation is to be found in Henry Irving, who is said to have "had neither the physical nor the temperamental equipment of a great tragic actor. His voice was thin and hard, his enunciation staccato and indistinct, his figure mean and awkward."

It would be easy to continue finding examples of over-compensation in all professions and branches of life.

Wexberg sums up the significance of organ inferiority in three possibilities :

" 1. The inferior organ represents a defect in the material available to the personality for the construction of its pattern ; at the same time this defective element is the point of least resistance where any injuries to the total organism may readily appear. In functional nervous diseases, for instance, physical symptoms affect the inferior organ almost without exception. Freud noted this phenomenon from time to time and called it the somatic rejoinder (somatic resonance).

" 2. The organ inferiority becomes a point of crystallisation for the mental superstructure of compensation and over-compensation. At that early age, when everything can be achieved by training, when a plus can be made out of a minus, the inferior organ becomes the focus of attention and training. It usually does not, however, cease to be the weakest point of the organism in this process, so that varying mixtures of over-compensation and failure which become ' characteristics ' for an individual are found.

" 3. The organ inferiority may deepen the feeling of inferiority that every child experiences ; and in consequence intensify the striving for significance towards an unattainable goal. In the course of this process the personality is changed, and usually exhibits the traits of a ' nervous ' character."

It will be seen that it was but a little step from the inferiority of

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an organ to inferiority of the whole organism. Adler said that the neurosis was produced because the patient felt inferior. It was, however, more than this : it was a device by which the neurotic was enabled to gain his own way and demonstrate his superiority.

Now, this was really no new principle. The analysts had long recognised that neurotic symptoms were not without benefit to the patient from many points of view. Freud points this out very clearly. He says, "Psychoanalysis early recognised that every neurotic symptom owes the possibility of its existence to some compromise. It must, therefore, also put to some good account the demands of the ego which manages the repression, it must offer it some advantages by finding for it some useful employment, otherwise it would suffer the same fate as the originally defended impulses. The term 'morbid gain' expresses this state of affairs. One might even have been justified in differentiating the primary gain for the ego which must have been active at the origin from a 'secondary' gain which appears in connection with other intentions of the ego, when the symptom is about to exert itself." From the Freudian point of view a patient may become, let us say, paralysed, firstly because her father, whom she loves excessively, is paralysed and she has identified herself with him (or introjected him), but secondly because she is enabled, because of her paralysis, to stay in hospital, where she is able to escape from her husband, whom she hates and dominates him by her helplessness. Adler, on the other hand, says the second reason is the only true one. This gain from illness was known even before Freud, and is really nothing new. Again and again one finds patients who manoeuvre their symptoms in order to obtain some advantage and gain some power over their relatives. For Adler this is the whole story, but for Freud it is but the beginning of it.

Either for some psychic reason connected with resistances in his own mind, or else deliberately, Adler has turned away from the sexual emphasis which is seen in Freudian psychology. He is dominated by the idea of using the neurosis for personal advantage. He believes that everyone who is neurotic has a desire to be dominant and shows either a frank or hidden aggressive attitude towards his environment. He traces this aggressive attitude to childhood, where, he says, "Throughout the whole period of development the child possesses a feeling of inferiority in its

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relations both to parents and the world at large. Because of the immaturity of his organs, his uncertainty, and lack of independence, because of his need for dependence upon stronger natures and his frequent and painful feeling of subordination to others, a sensation of inadequacy develops which betrays itself throughout life. This feeling of inferiority is the cause of his continual restlessness as a child, his craving for action, his playing of rôles, the pitting of his strength against that of others, his anticipatory pictures of the future and his physical as well as mental preparations." The child longs to be dominant and powerful, and inasmuch as the neurotic retains this trait he remains a child. The healthy individual, according to Adler, manages to adjust himself to the world around him by means of altruism. Suppose that the individual has this longing for power which Adler makes such an active principle in neurosis, and let us suppose that circumstances do not allow him to utilise his dominance. What is the result? Adler says the patient at once adopts a flight into illness. A sick person has considerable advantages in our modern civilisation, and these advantages depend entirely on the goodwill of the one over whom the dominance is desired. There is not much doubt that this is used by neurotics to gain their ends. Anyone who has seen the lengths to which a neurotic will go, the attacks which will occur at critical moments, the whole perpetual turmoil which fills the house, must admit that the secondary gain can be a very large one indeed. But what, might be asked, is the result if this flight into illness does *not* give the patient the power to tyrannise his environment? What does he do then? Adler would suggest that insanity might be the result, and that insanity is, as it were, an expression of an "If-I-can't-win-I-won't-play idea."

These views are so beautifully clear that they appeal instantly. With one fell swoop he throws overboard the complicated Freudian theories, the regression, the mechanisms, transference, repression and so on. He insists that the human organism is one integrated, coherent whole. If he does recognise the unconscious (and from his works he gives no sign of having done so), then it has no significance for him. There is an unwillingness of Adler and his school to recognise any other than the views he has expressed on inferiority and the desire for dominance as a cause of mental disease. Wex-

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berg says, " No other elaborations of the personal purposive trends than those which we have described as normal, or as neurotic, are possible. The endless complexity of individual behaviour patterns is the result of countless variations on the same theme, the chief and only theme of human existence. To question its unity is to question the fact that we are all human beings. The fundamental human pattern that begins with a feeling of inadequacy and develops, via compensation, to a feeling of security, is part and parcel of the psychological nature of man based upon his position in nature."

Adler was not satisfied to carry his theory of the wish to dominate as being fundamental in causing nervous illness only as far as this. " Who," he asked himself, " is it that has the power ? " Obviously man is the most powerful. Then, since man is the most powerful, women must desire to be men. They cannot overcome their nature, but they are able to dominate men in more subtle ways. For example, some women act as female Don Juans and have liaisons with man after man, as though they were trying to express as clearly as possible their resolution not to settle down as the inferior partner of one man. Or again, they may be quite frigid, as though they were intent on showing their lack of interest in the man who wished to dominate them and by so doing to make him feel humiliated. Adler felt that this morbid attempt to dominate which is so pronounced in the neurotic was, in the female, an attempt to be masculine. According to him, as long as the girl does not recognise the unchangeable nature which she possesses and the impossibility of being converted into a male, she will attempt to become a boy. She will not play with other girls, dolls will not interest her, and her chief delight will be to play with boys and to be a " Tomboy." The delight which some girls show in wearing trousers is said to be rooted in this cause. Physically it is, of course, impossible for the girl to compete with boys, and so her attempt usually ends in a certain amount of bitterness, since she can never be a real boy, and boys tend to despise her for it.

It is this attitude which is often, so Adler believes, prolonged into adult life, and which he calls the " masculine protest." When it is strong the woman may refuse to recognise her femininity at all. The weatherbeaten, harsh-voiced, chain-smoking harridan

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who plays games with tremendous energy and dominates everybody is the extreme which is the result of morbid enlargement of this attitude. Such a woman insists on economic independence and often prefers a career to marriage. She has no wish to have children, who would be nothing but a hindrance, or if, by some mistake, she does become married, then she marries a man of the type who is easily dominated, and she rules her family with a rod of iron.

This masculine protest is, according to Adler, the sole cause of homosexuality, which it must be admitted is prevalent amongst women. Wexberg says that "the extreme type of masculine protest occurs most frequently where a little girl is crowded from the normal line of development by a trick of nature—by external masculine characteristics, such as ugliness, facial hair, masculine body, a deep voice and the like." We must notice in passing that according to Adler's theory of over-compensation these masculine characteristics should be over-compensated so that the girl tended to be more feminine, but probably he would say, in response to this criticism, that the greater strength of the masculine protest overrides this over-compensatory tendency. He insists that masturbation is due to the woman turning her back on normal sexuality and is related to homosexuality inasmuch as they are both rooted in the masculine protest.

We have dealt so far with the effects of inferiority and the masculine protest in the case of women. It is obvious that men have neuroses also, and that a consistent theory must explain their neuroses. Adler insists that the same mechanism is at work. He believes that the sexes are not really so different as is usually believed. He says that the masculinity is over-valued, and that every boy feels the necessity of acting like a man. The roughness and uncouthness of the youth are an early attempt to show his masculinity. He believes that this roughness and uncouthness with the youth are more than that, and thinks they are a screen for the secret fear that he is not sufficiently masculine. Puberty is a time when he had to begin to face this, and it is almost one of mental stage-fright. Fearful of not being able to be sufficiently manly, he tends to become self-absorbed, day-dreaming and exclusive. Frightened of being unsuccessful with women, the young man retreats into masturbation. He may then find some

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older woman who is sympathetic and who forms a way out of his difficulties because she is able to be almost maternal. Now, such a situation Freud would say was based upon the Œdipus complex. This Adler denies. He does not believe that the Œdipus situation occurs half so frequently as does Freud, nor that it means anything other than that the child wants to become big like its father. Wexberg believes that "the average young man feels that sexual intercourse is a task which he cannot evade if he wishes to feel himself a man; our civilisation approves of a greater sexual freedom for men and guarantees them a lesser burden of consequences for sexual intercourse. Fear of women is the result of an exaggerated ideal of manliness which a boy develops in his childhood. In the fantasies which accompany masturbation he has always felt himself the victor over the other sex, but when he must translate these fantasies into reality he is seized with 'stage-fright.'" Now, this is directly contrary to the writer's experience. It is usual, when a boy has sexual fantasies accompanying masturbation, for those sexual fantasies to be concerned with some woman whom he knows in reality or whose photograph he has torn from a paper, and they are not usually of domination at all. Adler believes that it is this feeling of inferiority of the other sex which forces a young man to go with prostitutes, because in them he can find a woman who can be dominated by money. He says that the frequency with which the first attempt at intercourse fails shows the fear of the woman.

It is instructive to compare the views of Freud and Adler on the matter of the relation of a young man to women. Freud's views are that the young man who has not passed through his Œdipus stage satisfactorily will remain somewhat fixated on his mother. He will feel that his father is a rival for his mother's affections and will regard him with hostility. Nevertheless, he will fear the formidable father, and dread that he will avenge infringement on his sexual rights (that is to say, the other) by threat of castration. Most of this will be in the boy's unconscious, so that he will probably feel conscious of three things: firstly, his attachment to his mother; secondly, awkwardness with, or perhaps, frank hostility to, his father; and, thirdly, a feeling of anxiety due to his unconscious fear of castration. Such a boy will tend to fall in love with women who resemble his mother, and his

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feelings of guilt and anxiety will make him shy and awkward in company.

Now let us examine Adler's point of view. Adler considers that the feeling of inferiority is a primary phenomenon. The boy may feel hostile to his father, but that is merely a manifestation of his sense of inferiority. He wishes to be big like his father and show his enhanced masculinity by dominating his mother. The difference between the two points of view is obvious and irreconcilable. Wexberg says that "when a boy chooses to love women who are similar to his female relatives because of their age, his Œdipus complex is little more than a trick of a timid soul." Anyone who has seen the Œdipus complex in full blast may quite reasonably express astonishment at it being called the trick of a timid soul!

It is obvious that, if it is superior to be a man, such a feeling will have a far-reaching effect on women, and this is exactly what Adler insists that it has. A man, after all, who feels that he is not a proper man has not such a very long journey to go to reach complete masculinity, and moreover his goal is an attainable one. It is within his biological powers, but with a woman who displays the masculine protest the matter is different, inasmuch as her aim is an impossible one. To reach the complete happiness which is only attainable by fulfilling her biological purpose—by marriage, mating and motherhood—a woman must renounce the goal of masculinity completely. When a woman reaches the age when she desires to complete her biological purpose, her sexuality becomes more and more urgent. Adler says she desires yet repudiates relations with the opposite sex because they are considered a disgrace and a subjugation. Marriage, from Adler's point of view, is regarded as something which can only be attained after the woman has succeeded in her struggle to cast off her desire for masculinity. Wexberg paints the following picture. He says of this struggle: "The storm gradually passes. The final attitude towards life and its tasks, and especially towards the problems of sex, emerges. If the girl has essentially reconciled herself to her sexual role, earnest relationships with men begin. The more she has attained inner security, courage and self-confidence, the more she is disposed to surrender herself to actual relationships." Only this complete surrender to her physique,

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the recognition that she is feminine and not masculine, leads to complete happiness.

It is difficult to know how much of Adler's theory is correct. It must be admitted that throughout the ages women have been kept in an inferior position, and in some countries they are still subjugated. Nevertheless it is difficult to believe that this motive can have such strength in those countries where women are allowed full liberty. Nor does one encounter this struggle at the approach of marriage. It is, in fact, much more common for men about to be married to commit suicide or disappear with loss of memory than for women. One might expect that it would be women, who have so much more than men to sacrifice in abandoning such masculinity as they have, in marrying, who would commit suicide or avoid marriage by some means or other. On the contrary, it appears more usual that the woman enters marriage gladly and with no interior struggle.

In 1913 Adler laid down certain views which were the more or less fundamental tenets upon which he founded his philosophy, and are a kind of ten commandments of individual psychology. They are the following :—

“ 1. Every neurosis can be understood as an attempt to free oneself from a feeling of inferiority in order to gain a feeling of superiority.

“ 2. The path of the neurosis does not lead in the direction of social functioning, nor does it aim at solving given life-problems, but finds an outlet for itself in a small family circle, thus achieving the isolation of the patient.

“ 3. The larger unit of the social group is either completely or very extensively pushed aside by a mechanism consisting of hypersensitiveness and intolerance. Only a small group is left over for manœuvres aiming at the various types of superiority to expend themselves upon. At the same time protection and the withdrawal from the demands of the community and the decisions of life are made possible.

“ 4. Thus estranged from reality, the neurotic man lives a life of imagination and fantasy, and employs a number of devices for enabling him to side-step the demands of reality, and for reaching out towards an ideal situation which would free him from any service for the community and absolve him from responsibility.

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" 5. These exemptions and privileges of illness and suffering give him a substitute for his original hazardous goal of superiority.

" 6. Thus the neurosis and the psyche represent an attempt to free oneself from all the constraints of the community by establishing a counter-compulsion. This latter is so constituted that it effectually faces the peculiar nature of the surroundings and their demands. Both of these convincing inferences can be drawn from the manner in which this counter-compulsion manifests itself and from the neuroses selected.

" 7. The counter-compulsion takes on the nature of a revolt, gathers its material either from favourable affective experiences or from observations. It permits thoughts and affects * to become preoccupied either with the above-mentioned stirrings or with unimportant details, as long as they at least serve the purpose of directing the eye and the attention of the patient away from his life-problems. In this manner, depending upon the needs of the situation, he prepares anxiety and compulsion-situations, sleeplessness, swooning, perversions, hallucinations, slightly pathological affects, neurasthenic and hypochondriacal complexes and psychotic pictures of his actual condition, all of which serve him as excuses.

" 8. Even logic falls under the domination of the counter-compulsion. As in psychosis, this process may go as far as the actual nullification of logic.

" 9. Logic, the will to live, love and human sympathy, co-operation and language, all arise out of the needs of human communal life. Against the latter are directed automatically all the plans of the neurotic individual striving for isolation and lusting for power.

" 10. To cure a neurosis and a psychosis it is necessary to change completely the whole upbringing of the patient and turn him definitely and unconditionally back upon human society.

" 11. All the volition and all the strivings of the neurotic are dictated by his prestige-seeking policy, which is continually looking for excuses which will enable him to leave the problems of life unsolved. He consequently turns against allowing any community feeling to develop.

" 12. If, therefore, we may regard the demand for a complete and unified understanding of man and for a comprehension of his

* Affect is the scientific term for emotion.

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(undivided) individuality as justified—a view to which we are forced both by the nature of reason and the individual psychological knowledge of the urge toward an integration of the personality—then the method of comparison, the main tool of our method, enables us to arrive at some conception of the power lines along which an individual strives to attain superiority.”

One might expect that these fundamental tenets would have been expanded and perhaps some more would have been added to them, but no; individual psychology has not changed one iota in the years which have followed, and Adler was still preaching exactly the same as he preached in 1913, when he died nearly thirty years later.

What does this mean? Is it that Adler had happened upon the fundamental principle of human nature, as his followers insist, or that, having built his theories upon one fundamental doctrine, it is impossible to expand them? Whichever view one adopts, one has to admit that his theories are explanatory. Moreover, they are to a certain extent supported in a roundabout way by some of the Freudian discoveries. For instance, the deeper one drives an analysis the more one tends to unearth hate—the psychoanalysts speak of this hate as anal or oral sadism—but nevertheless *it is hate*, and it might be correct to say that in neurotic and psychotic patients hate is more fundamental than love—just as Adler insists. Moreover, one can, in some patients, see how this perverted hate spreads throughout the whole of a person's life and distorts it. The writer once asked a schizophrenic patient, “Who is it that you love the most—your father or mother?” This patient (who incidentally was a most dangerous one and always making unprovoked attacks on the attendants) turned round in a sullen way and glared with contempt. “I don't love either of them,” he said, “I love only myself.” For Adler the attacks upon the attendants coincide perfectly with the patient's general attitude to life.

One principle which we have not yet examined in detail is what the Individual Psychologists call “somatic jargon” or “organ jargon.” It means that every illness is the expression of a purpose and a symbol of that purpose. For example, it is believed that a woman who fears to fall sexually may have symptoms of giddiness and fear of falling physically. For another instance we may take difficulty with vision. It may be supposed that we have eyes in

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order to see, and that trouble with vision implies a desire to avoid seeing something. It need not be some concrete thing which it is attempted to avoid seeing, but perhaps one's own imperfections. Now, this is not very much different from the symbolisation which Freud described many years before Adler's secession. There is no doubt that the symptoms have a special meaning and that this meaning can often be discovered. Writer's cramp is frequently found to occur in people who have an uncongenial post which entails a lot of writing, and it is quite obvious that it implies a refusal to write any more—it fits in very well with Adler's views. We must not, however, expect this to be so always. For example, the neurotic complaint called "miner's nystagmus"—a flickering of the eyes which is found to occur in miners who have had some great shock when working underground—can hardly be explained from the point of "organ jargon." It is more probable that the suggestive effect of other miners having this trouble has caused its onset. There is no doubt that there is a considerable morbid gain in the illness, since the patient is usually found light work on the surface after he has been ill. It is, nevertheless, hard to see what exactly his illness symbolises. Vomiting and diarrhoea clearly represent the desire to reject some unpleasant fact, and this physical desire is turned into physical symptoms which clearly symbolise the wish.

It must be admitted that it is very difficult indeed to understand a disease like melancholia (in which the patient gets more and more depressed until he may eventually commit suicide or die by refusing to take enough nourishment because he feels unworthy of it) from the point of view of organ jargon. Adler says that the self-reproaches which the melancholic heaps upon himself are assumed partly to make him the centre of all attention and pity, and at the same time free him from all obligation. One cannot help feeling that it is rather far-fetched to assume that the patient would carry this as far as death. Again, in such a disease as schizophrenia, described by Bleüler and discussed in the chapter on Janet, it is difficult to understand what could be sufficient gain for the patient to abandon all contact with the world, to disintegrate his personality and to be tormented day and night with "voices," nor can one readily understand what such a psychic disintegration could possibly symbolise. Perhaps the safest con-

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clusion to which we can come with regard to Adler's theories is that they are most likely to be valid in the neuroses—hysteria and neurasthenia and so on—but that they are difficult or impossible to correlate with the cases of frank insanity in which such a view as organ jargon appears to be inadmissible.

Adler believes in the interpretation of dreams, but his interpretations do not appear to be carried to such lengths as the psychoanalyst's. At first he believed that dreams were to be considered as turning from the masculine to the feminine line, which means that the wish-fulfilling tendency is considered from the point of view of the masculine protest. Later he believed that dreams enabled man to realise unconsciously superiority which was denied him consciously, and this is the view which he held when he died. A dream, to Adler, is often a trial solution to a problem. Although Wexberg generously admits that we must all recognise Freud's accomplishments in dream analysis and that we owe the most important elements of dream interpretation to him, yet the Adlerian school does not really adhere very closely to psycho-analytical technique in dream analysis. Adler says, for example, that individual psychology teaches that the dream is a form of preparation for the future, other than the preparation which is effected during our waking life. Dreams of flying, which are usually found to be of a sexual nature by the Freudians, are found to be expressions of ambition by the Adlerians. Wexberg argues that the Freudian censor cannot really exist, since sometimes "moral and ethical" people dream "shameless, undisguised sexual, perverse and criminal dreams" about which they are ashamed when they awake, and yet analysis of other of their dreams may show the same tendencies greatly distorted. He adds, "If distortion in the dream were actually the work of the censor, we should be forced to prove that the more 'forbidden' the latent content, the more distorted the dream becomes." This is exactly what the Freudians insist is usually the case, but of course, through fatigue or some other cause, it is possible for the censor, like Homer, to nod occasionally and let a dream pass which at other times would be ruthlessly distorted. For Adler the dream has no concern with the past, and he scorns the infantile memories and the traces of the complicated sexual development which Freud has discovered in them, and insists that dreams are

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concerned with the immediate or more distant future of the dreamer, and that any of the vivid childish memories which occur in dreams are evoked because of their bearing on the future. Dreams, therefore, for Adler are an unconscious attempt to find a way out of immediate difficulties. He says that "it is always the purpose of the dream to pave the way towards the goal of superiority—that is to say, the individual's private goal of superiority. All the symptoms, movements, dreams of a person are a form of training to enable one to find this dominating goal—be the goal one of being the centre of attention, of domineering, or of escape. The purpose of the dream is neither logically nor truthfully expressed. It exists in order to create a certain feeling, mood or emotion, and it is impossible fully to unravel its obscurities. But in this it differs from waking life, and the movements of waking life, only in degree, not in kind. We have seen that the answers to the psyche to life's problems are relative to the individual scheme of life; they do not fit into a pre-established frame of logic, although it is our aim, for purposes of social intercourse, to make them do so more and more. Now, once we give up the absolute point of view for waking life, dream life loses its mystery. It becomes a further expression of the same relativity and the same mixture of fact and emotion that we find in waking life.

"Historically dreams have always appeared very mysterious to primitive peoples, and they have generally resorted to the prophetic interpretation. Dreams were regarded as prophecies of events to come. In this there was a half-truth. It is true that a dream is a bridge that connects the problem which confronts the dreamer with his goal of attainment. In this way a dream will often come true, because the dreamer will be training his part during the dream and will be thus preparing for it to come true."

For Adler, therefore, dreams are an attempt to solve a problem and, since our fundamental problems are connected with the attempt to be superior, dreams must be a way to this longed-for goal.

One might say that, since we have discovered such a wide gap between the Freudian and the Adlerian interpretations, dreams were either just nonsense or else impossible to interpret with our present knowledge. It must be remembered, however, that a

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dream is tremendously condensed, and that two or three or even more meanings may all be concealed in the one dream, and that a number of interpretations may all be correct. Moreover, it must be remembered that the Adlerians are inclined to neglect sexuality for aggressive tendencies in dreams, and that if one gives a patient the least impression that one regards sex as something to be avoided, or that one despises him for relating a sexual dream, then that patient will conceal any dreams which appear to him to reveal the slightest evidence of sexuality, and in that way the analyst will receive only dreams which display aggression. He will thus gather a wrong impression as to the general nature of the patient's dreams. I believe that this occurs much more frequently than is appreciated, and that it will account for the fact that some physicians receive few sexual dreams from their patients, while they always receive ones of every other type.

It is difficult to gather from the writings of Adler and of his adherents exactly what are his views regarding the unconscious. Adler obviously does not believe in the unconscious in the same way as the psychoanalysts, and yet he does treat facts as though they were unconscious. He does not seem to have formulated any definite ideas regarding the matter. He denies, for example, repression. Freud relates how Adler once said, "If you ask whence comes repression you are told: from culture. But if you ask whence comes culture, the reply is: from repression. So, you see, it is only a question of words." Freud said in reply that "there is nothing mysterious about it, except that culture depends on acts of repression of former generations, and that each new generation is required to retain this culture by carrying out the same repressions. I have heard of a child that considered itself fooled and began to cry because to the question, 'Where do eggs come from?' it received the answer, 'Eggs come from hens.' And to the further question, 'Where do hens come from?' the information was, 'From the eggs.' And yet this was not a play upon words. The child had been told what was true."

It will be seen, therefore, that Adler recognises a vague unconscious, but denies any force which drives things into it. The unconscious, for Adler, is rather the unregarded, the part of our minds which we ignore. He pays no attention to the other unconscious mechanisms which the Freudians have taken such pains

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to discover and described so minutely. Introjection and projection, displacement and symbolisation are of no interest to him at all. They are merely channels through which the force of the masculine protest makes itself felt, and are of no more account. He says that "the patient makes use of the unconscious in order to be able to follow the old goal of superiority." And again that "the neurotic psyche, in order to be able to attempt the attainment of its over-strained goal, must resort to artifices and stratagems. One of these artifices is to transfer the goal or the substituted goal into the unconscious." The mechanisms involved and the way that this occurs he does not state. It would appear, then, that he regards the unconscious itself as merely a device by which the patient is able to gain his ends, which are kept secret rather than overt. So we see the mighty unconscious of Freud dethroned and made the pitiful slave of consciousness.

Adler treats transference in much the same way. If, indeed, he stoops to recognise it, he does so as being merely the patient's attempt to defeat the analyst by a pretence of love. Adler says, "At the time of his [*i.e.* the patient's] meeting with the physician and frequently earlier, the same connection of feelings is found as that which exists in persons of greater ability. That the transference of such feelings or the opposition to them seems to begin later, must be based upon some mistake." Transference is therefore the respect which the patient must feel for the one who is cleverer, and so more powerful, than himself, and, as the analysis proceeds, the patient feels opposed to the analyst's superiority.

Elsewhere he says, "This love transference to the physician is consequently fictitious, to be interpreted as a caricature, and not to be taken as 'libido.' It is in 'reality' no (real) 'transference,' but simply an attitude and habit going back to childhood and representing the road to power."

Resistance, from Adler's point of view, is merely the attempt of the patient to conceal from himself the root of his illness, which is, of course, for Adler, the lust of power. It is also an attempt to demonstrate his superiority to the physician.

Adler insists that a patient's method of reaction is rooted in his earliest childhood, and that he continues to use that method throughout his whole life. Let us examine the case of a little girl who is much admired for her "sweetness." From her earliest

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childhood she discovers that the best way to demonstrate her superiority and to gain her own ends is to utilise this sweetness. She never loses her temper, but merely "looks hurt." Perhaps she sheds a few tears, but bravely conquers her grief. She discovers from experience that the adult heart is usually touched by such behaviour, and that it is possible to conquer her rough brothers and her more downright sisters by this little manoeuvre. She therefore utilises it more and more, and, indeed, perfects her technique. Throughout her whole life she succeeds by means of it. She captivates by her "sweetness" the heart of the man she is determined to marry and defeats her rivals by countering with her sweet manner the open hostility which they show. Having won her husband, she keeps him subordinate by the fact that no one could go against a girl with such a sweet manner. She is so easily hurt, so helpless, such a delicate plant that her husband cannot cross her. Consequently she rules him with a rod of iron, and her tears are more to be feared than the anger of another. Perhaps, later, she has children, and again she is very successful in using the same technique on them. "Oh, you wouldn't do that, darling, would you? It would hurt mother so," will spike any of the child's guns, and he may rage inwardly, but the universal condemnation which will greet any revolt against the sweet mother will break the child's spirit, and make him obedient to the steel hand which he soon discovers is concealed behind the velvet glove. It is little wonder that such a woman, if she finds her technique of no avail, will be made ill by her erring husband or child. She will suffer her illness with superb courage, so that her behaviour will be the admiration of the whole district, and the wicked child or husband who has brought on her illness will be universally condemned.

It is this reaction, this utilisation of a technique for power, which Adler has called the "life style," and there is no doubt that he is right in what he states. One has merely to look at those around one to see that there are certain individuals who utilise one or two methods by which they are able to get their own way and to subjugate those who oppose them.

• Adler is loath to classify excessively, because he believes that human beings do not fall easily into categories, and to force them to do so is to distort the picture. Nevertheless he admits that for

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teaching purposes he describes people as classifiable into four types. He says, "Thus, we find individuals whose approach to reality shows, from early childhood through their whole lives, a more or less dominant or 'ruling' attitude. This attitude appears in all their relationships. A second type—surely the most frequent—expects everything from others and leans on others. I might call it the 'getting' type. A third type is inclined to feel successful by avoiding the solution of problems. Instead of struggling with a problem, a person of this type merely tries to 'side-step' it in an effort to avoid defeat. The fourth type struggles, to a greater or lesser degree, for a solution of these problems in a way which is useful to others.

"It is necessary to say here that each special type retains his style from childhood to the end of his life, unless he is convinced of the mistake in his creation of his attitude toward reality. As I have said before, this style is the creation of the child himself, who uses inheritance and impressions of the environment as bricks in building his particular avenue of success—success according to his own interpretation."

If Freud's is a philosophy of love, we must agree that Adler's is a philosophy of aggression, and consequently Adler's theories are of more immediate social interest than those of Freud. When we love someone it is merely in our own immediate neighbourhood that we make this felt, but our desire to be superior, to show our aggression to the world, affects the whole world. It is therefore appropriate that Adler should apply his views to social life and social problems.

The application of his views to education, it must be admitted, is of value. This is partly because the child responds well to a more superficial technique than that elaborated by Freud. Moreover, Adler's views are more easily understood and more applicable by teachers. Adler says that there are three types of children which find difficulty at school. These are, firstly, the child with defective organs, the cripple, the excessively tall or short, the ugly and malformed and so on. Then we have the pampered, ambitious child who wishes to rule the roost and have its own way in everything. Thirdly, we have the cautious, hesitating and fearful child. The crippled child is, according to Adler, the hated child, which is not prepared for social life, and this child has the

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greatest difficulty at school. The pampered type of child is quarrelsome and cowardly. The timid child values its superiority so much that it is in constant fear of losing it. It is the duty of the teacher not merely to impart knowledge to these children, but to so socialise them that they are able to overcome their weaknesses and fit in satisfactorily with the social scheme of life.

Adler also points out the importance of the order of birth for children in a family. He says that the first child is in the position of being the only child for a considerable time, until the birth of the second child dethrones it. He believes that the eldest child develops a conservative point of view that those who are in power should remain in power. The second child has a tremendous urge, because he is continually trying to catch up with the elder brother, who has the advantages of his extra years in physical and intellectual competition. The youngest child is always in the position of an only child, since he can never be dethroned. It is obvious that such generalisations as those of Adler are of value to the teacher, since they explain the child's otherwise inexplicable behaviour and offer a solution.

Adler has also applied his views to social life, and ascribes such social aberrations as criminality, perversions, prostitution, drug-addiction and so on all to the will to power. He believes that criminality is an exhibition of a sense of superiority. He says, "We see children who start stealing suffering from a feeling of superiority. They believe they are deceiving others; that others do not know that they are stealing. Thus they are richer with little effort. The same feeling is very pronounced among criminals who have the idea that they are superior heroes." "If a murderer thinks himself a hero, it is a private idea. He is lacking in courage, so that he escapes the solution of the problems of life. Criminality is thus the result of a superiority complex, and not the expression of fundamental and original viciousness."

Adler thinks that the pervert is again manifesting his superiority, and he insists that homosexuals stress their abnormality with pride. Again, prostitutes, according to Adler, practise their trade merely for the satisfaction of degrading men. He says, "Thus, while the man in need of the prostitute believes that he has demonstrated his superiority over woman, she is aware merely of her power of business attraction, the nature of her demand and her

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monetary value, and so degrades the man to the rôle of her means of subsistence."

Drug-addiction and alcoholism are again methods by which the patient can avoid responsibility and gain a spurious pleasure. It must be admitted that these explanations are rather too facile and are open to considerable criticism. For example, the homosexual frequently longs to be normal, and by no means boasts of his sexual aberration. He feels that this is a thing which is invading his life against his will, and begs for treatment to relieve him. It seems difficult to believe that the prostitute is getting any feeling of satisfaction from her trade. She is usually ill-treated and scorned, and often her life is made a burden to her. In the writer's experience most women of the prostitute type (and one occasionally has an opportunity of treating them psychologically) are seeking a substitute for someone whom they have loved in the past.

When we come to criticise Adler's views we must be cautious. The Freudians insist that not one single idea in his scheme is original. The lust for power, the masculine protest, is merely another name for the penis envy which they have described in the female and the castration fear which they have described in the male. Organ jargon was defined as symbolisation by Freud before Adler joined the psychoanalysts. Are we therefore to discard Adler's views as worthless? It would be ungracious and ungrateful to do so. Adler has described a psychology which is easy to understand and which is really a part of that described by Freud, but delineated much more simply, and which escapes offence because of the lack of emphasis on sexuality. In fact, Freud declared that both Adler and Jung seceded because they had not the courage to face the factor of sexuality, and that both of their systems are ways of avoiding it.

We must admit that we owe a debt to Adler in that he has forced many who would have neglected psychology to start its study and its application. Since this applies particularly to teachers, it cannot be without benefit in the long run.

We must safeguard ourselves, however, by pointing out that Adler's psychology is essentially an egopsychology—that is to say, a study of conscious processes. In fact, he says it is a matter of indifference to him whether a thing is conscious or unconscious. This neglect of the unconscious which has been discovered with

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such labour is distressing, and is likely to produce a state of stasis in the development of his psychology. It is to his own disadvantage that he does neglect unconscious processes, since there is a much greater wealth of hate and aggressiveness in the unconscious than one could ever find in consciousness.

It should be noted also that Adler has failed to correlate his views with the work which preceded him. He neglects the unconscious which Janet, Morton Prince and Freud studied with such care. His work is no departure from known to unknown—it is a fresh start, and one must be suspicious of it for this alone. This does not invalidate it, however, since great discoveries have been made by reconsideration of material which had been utilised previously by others. Adler's disregard of mechanisms is comparable to a physician who says, "This patient has pneumonia—I don't know nor do I care how pneumonia produces its effect—I must treat it according to fixed principles." Such a disregard of pathology would be condemned in a physician, and must be looked at with suspicion in a psychologist.

The study of human beings is no easy one. They tend to confuse the psychologist by their capacity to conceal their motives and by their dislike of psychological examination into their behaviour and its nature. As a way out of this difficulty the psychologist has attempted to study the sub-human primates, the anthropoids. Also, although the material is so much simpler it is more complicated than one would expect, and one cannot obtain a final answer to the eternal question of power versus sex as the mainspring of conduct. Maslow has studied the social behaviour of monkeys and apes, and Adler has pointed out clearly the similarity of their conduct to that of human beings so far as the urge to dominate is concerned. Others, such as Zuckerman and Robert and Ada Yerkes, have investigated similar animals. Some of their findings agree with Maslow's and some do not. Here is some supporting material from Zuckerman's "Social Life of Monkeys and Apes." He says, "Rarely a day passes without a scuffle between bachelors, but it is often difficult to understand the cause of their quarrels. Occasionally it is due to a baboon attempting to secure food that is snatched by a more dominant fellow. Sometimes it is precipitated by one animal rushing to attack another who has evoked a squeal of terror from an immature

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animal. Usually, however, fights are begun as a display of dominance, one animal suddenly threatening any other in its vicinity." Here is some evidence which supports the Freudian view, taken from the same author: "The normal behaviour of most unmated male baboons suggests their passive indifference in the presence of females within the colony. On rare occasions, however, the atmosphere suddenly changes and every male appears, at the peril of life, to attempt to secure a female in an attack upon a harem. The behaviour of one male influences another, and there have been few 'sexual fights' on Monkey Hill in which most members of the colony have not been engaged."

Interesting though these studies are, the impatient person may object that he is not interested in theoretical considerations; all he wishes to know is whether it is possible to cure neurotic sufferers of their illness by Adler's technique. The answer is that you most certainly can. There is no doubt that a certain type of patient will respond to Adler's methods very well. Moreover, in those cases which do respond the time taken for treatment will be considerably reduced, although naturally the illness is not attacked at such a fundamental level as it would be by Freudian methods. Nevertheless the wise physician will not do anything radical if it can be avoided, and it would be absurd to analyse a patient for a year if he can be returned to work and made fairly stable by treating him in another way for a month. It is, however, in the realm of child psychiatry that the methods advocated by Adler are most successful and where one finds their ideal *milieu*. Freud's methods are too intricate to use with children, although the work done by Melanie Klein and Anna Freud on them has been valuable from the point of view of psychoanalytic research. Adler's methods are used either consciously or unconsciously by all those who treat children for neurotic troubles. Almost every infantile neurosis starts with the birth of a little brother, the death of a relative or some other event which makes the child feel less loved, inferior or neglected. To alter the environment and help the child to understand what has happened is the secret of its cure. It is for this understanding of children and development of their therapy that we must be grateful to Adler, and possibly the Child Guidance Clinic will be a permanent memorial to his fame for all time.

CHAPTER SEVEN

JUNG AND THE HINTERLANDS OF THE MIND

CARL GUSTAV JUNG was a member of the Zürich school of psychology which, with Bleüler at its head, gave Freud such strong support in the early days of psychoanalysis. The whole world had greeted Freud's discovery with hostility and scorn. The mocking continued for some time, and then, just when it was beginning to die down somewhat, the leader of the great psychiatric school at Zürich, Bleüler, made it known to him that his ideas and discoveries were regarded sympathetically there, and even that he would like to make more intimate contact with his adherents in Vienna. The result of this was the first psychoanalytic congress, and it was attended by Bleüler's young yet able assistant, Jung.

Freud acknowledged freely that Bleüler and Jung did a great deal to direct the attention of the scientific world to the discoveries which he had made, but he insisted that it was the fact of the antagonism which psychoanalysis had aroused, and which was dying down, which led to the acceptance of the discoveries, and that it was not solely due to the publicity given to them by Bleüler and Jung.

Nevertheless, he said, "But whilst in all the other places this manifestation of interest resulted first in nothing but a violent and emphatic repudiation of the subject, in Zürich, on the contrary, the main feeling of the situation was that of agreement. In no other place was so compact a little gathering of adherents to be found, nowhere also was it possible to place a public clinic at the service of psychoanalytic investigation, or to find a clinical teacher who regarded the principles of psychoanalysis as an integral part of the teaching of psychiatry. The Zürich doctors became, as it were, the nucleus of the little band which was fighting for the recognition of psychoanalysis. Only in Zürich was there a possible opportunity to learn the new art and to apply it in practice."

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There can be no doubt that Freud was grateful for the Swiss adherent's support, and as he wished to take a less prominent part in the Psychoanalytical Society, he transferred his presidency to Jung. He says, rather unhappily, "I had no notion then that in spite of the advantages enumerated, this was a very unfortunate choice; that it concerned a person who, incapable of tolerating the authority of another, was still less fitted to be himself an authority, one whose energy was devoted to the unscrupulous pursuit of his own interests."

Whether Freud's reproaches are justified or not, it is a fact that Jung slowly deviated farther and farther from the Freudian point of view, until he finally cut himself off from the Viennese school. He retains a great admiration for Freud, and it is notable that he never gives Freud any of the sly stabs which Adler delights to use. Moreover, he broke away from the psychoanalytical movement of his own free will.

Jung must have been an impressive young man. Wittels describes him as being "tall and upright of figure, like a young Siegfried. He had a bullet head with closely cropped hair, was clean-shaven, and wore gold-rimmed spectacles."

The earliest investigation of note which he made was his careful study of association experiments. We have seen in the discussion on Freud that the use of free-association was an essential part of his discoveries. Jung started from rather a different angle. His method of approach was particularly fortunate, since scientists were rather suspicious of free-association and inclined to neglect its importance. Jung followed on experimental work which had been started by Galton in 1879 and by Wundt a year later. He did not allow the patient to talk at random of anything which came into his head, as Freud did, but started from a more controllable angle. He had a list of words—a hundred—by which he used to compare the reactions of one patient with those of another, or one patient's various reactions to different words. He read out one of the words in his list, and the patient was asked to say as rapidly as possible the first word which came into his head. The reaction time (between the control-word and the associated-word) was checked each time as accurately as possible with a stop-watch.

The type of words can be seen from a few taken from his list, *e.g.* Head, Green, Water, Sing, Dead, Long, Ship, Make, Woman,

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Friendly, etc. Jung found that there were many different reactions to the stimulus word—that the patient might merely repeat it, he might say a word which rhymed with it, he might say the opposite to the word, he might refer it to himself and so on. Again, the time might be unduly prolonged, it might be more rapid than usual, in the case of certain words, or the patient might not understand a word. By a study of the result of a number of these experiments in controlled association it is possible to find that certain constellations of ideas are of importance emotionally to the patient. These are the famous complexes to which we have referred previously.

The average time taken for an association is different in men and women. Men take 1.6 seconds and women take 2.0 seconds. Educated men and women usually take rather less time to associate than uneducated persons. In one experiment on a Swiss mental nurse Jung found that the following reaction times were obtained for the stimulus words given :—

Marriage—girl	.	.	6.8 seconds
To kiss—laugh	.	.	6.0 „
To love—willing	.	.	5.6 „
Male nurse—cupboard	.	.	8.0 „
Dream—basket	.	.	6.4 „
Ripe—fruit	.	.	6.6 „
To bless—to receive	.	.	5.8 „

The explanation for such inappropriate reactions as male nurse—cupboard is that when the word male nurse occurred she really thought of female nurse, and her thoughts took an erotic turn. She then answered at random on the first thing coming into her mind—this was a cupboard which she could see. The explanation of dream—basket is similar.

Jung said that there was a remarkable similarity in the associations of idiots and imbeciles. These patients tend to define the word rather than associate with it; for example, in answer to “wages,” an imbecile said, “When you work at the factory.”

Jung examined patients who were suffering from various neuroses by means of his controlled association experiments. He was thus able to form an opinion of the cause of the patient's illness and confirm whether this was the real cause by subsequently

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subjecting the patient to a Freudian psychoanalysis. He examined a woman who was suffering from obsessions and insomnia. He concluded from the association experiments that the patient felt that "she is old, ugly; she finds her yellowish complexion very disagreeable, and her physique, upon which she bestows anxious attention, displeases her as being too small. She has a great longing for marriage; she would be a loving wife to her husband and would like to have children. Beneath these erotic, yet quite innocent, symptoms there seems to be a sexual component which the patient has every reason to suppress more strongly. There are hints from which it can be inferred that she bestows unusual attention on her genitalia; in a respectable and educated single lady that can only signify onanism,* of course, in the wider sense of perverse sexual self-satisfaction." All this was subsequently confirmed by the Freudian psychoanalysis, in which he discovered that the lady was bothered by sexual ideas regarding the gardener, who had made sexual advances to her, which she had repelled. A number of other erotic ideas and memories were subsequently revealed, and finally memories of early masturbation. Jung managed to cure this patient in the very short period of *three weeks*! He was able to produce a number of similar experiments, and it must be admitted that with his colleague, Ricklin, he added considerably to the scientific defence of psychoanalysis.

Having done notable confirmatory work by means of his method of controlled association, Jung next turned to the study of insanity, and was able to show that the symptoms of the insane had quite as much meaning as the symptoms of the neuroses. The same mechanisms were at work, and were even more evident than in other conditions. The difficulty in understanding the speech of the insane was found to be due to the great amount of condensation which occurred. For example, a woman who said that she was Socrates was really implying that she was ill-treated like Socrates, and that, like him, she was imprisoned unjustly and so on. Introjection and projection were obvious, and Jung recorded one patient who had been making curious movements for years and who, it was discovered, had once loved a cobbler. The movements were the movements which are made in sewing a shoe,

* Onanism is used by Jung to mean masturbation, although it really means coitus interruptus.

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and there is little doubt that this was a case of introjection. It must be understood that most of the psychoanalysts at this time were working on private patients, and so had little opportunity of studying developed insanity. Jung, working in the great mental hospital of Zürich—the Burgholzi—had all the opportunities possible of applying Freud's discoveries to his patients. He did not accept the possibility of a purely psychological origin for insanity, but suggested that the mental mechanisms were released by some poison in the blood. This idea had been started by Kraepelin and adopted by Bleüler, Jung's chief, so that it is not surprising that he found difficulty in breaking free from it.*

It must be remembered that all the discoveries which have been recorded so far were made by Jung while he and his colleagues were still members of the Psychoanalytical Society. We now come to the time when, unfortunately, he and the rest of the Zürich group separated from the Viennese school, and have been separate ever since. The cause of this secession appears to have been the emphasis on sex which is an integral part of psychoanalysis, but which the Zürichers had always found hard to stomach. It seems more probable that it was this incompatibility of sexuality and the strict protestantism of the Swiss which caused the break rather than any personal ambition on Jung's part. Freud had showed that he wished Jung to be at least the nominal head of the movement, so that any ambition which he may have had must have been more or less satisfied. No; to any one who cares to look deeply, it is obvious that even in his early work Jung was finding it difficult to regard sexual ideas with indifference. A scientist should be neither excited nor disgusted by his material, whatever it is. He must regard it merely as matter for study. This is particularly necessary in psychological work, which is impossible otherwise. Now, this is just what, it appears, Jung could not do. For instance, in his work on association, he says about one patient, "She reproduced a cunning accumulation of the most disgusting indecencies which she had occasionally heard in the streets, the repetition of which we may be spared," and again, "The disgusting business of snuffling in the bed of her master and mistress"

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* This problem has now been definitely solved. The response to insulin treatment which some schizophrenics show upholds the possibility of an organic basis to that form of insanity.

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(to smell if they had had coitus). I do not believe that one who regards sex with indifference could have written of it with such revulsion.

Whatever the reason may be, it became apparent that the Zürich school was drifting from Freud. At first one of Jung's colleagues, Ricklin, started, in popular articles, to suggest that the psychoanalysts were correcting certain regrettable mistakes which had discredited their work, and then Jung wrote to Freud in 1912 and said that by some modifications he had succeeded in making psychoanalysis more palatable to those who had formerly rejected it. Freud would have none of this, and told him that the more he forsook the hard-won truths, the more adherents he would gain.

Jung had developed a theory of the libido by which he was able to avoid the sexuality which was such a stumbling-block. Freud insists that both Jung and Adler have escaped from sexuality by means of their theories. Adler has turned his back on sexuality and adopted aggression as the driving force. Jung took the libido and de-sexualised it. Now, we have seen that the libido, from the Freudian point of view, is craving, and that all craving is, according to Freud, sexually charged. Sex is the real driving force behind all striving. If sex is dammed up and not allowed free expression, then it will find oblique channels by which to escape and so form art, literature, religion and every one of the manifestations which are called sublimations. These sublimations are, Freud insists, merely the manifestations of an instinct whose end is inhibited. The energy cannot be dammed up indefinitely, and so is canalised away into some harmless channel. Jung has very ingeniously turned this round. He states that the human being is endowed with a supply of energy which can be turned into various channels. It may be sexualised and so be dissipated in the attaining of sexual ends. It may, on the contrary, be turned into religion, art and purely social ends. The energy is merely energy, and is not related to sex in any other way than that sex is one of the channels through which it may flow if that channel is open to it.

Jung specifically says that his idea of energy, or life-energy as he calls it, is not to be taken as mere force. He says, "A concept of life-energy has nothing to do with a so-called life-force for this latter, as force would be nothing more than a specific form of a universal energy. To regard life-energy thus, and so

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bridge over the still-yawning chasm between physical and vital processes, would be to do away with the special privilege of bio-energy as opposed to physical energy." Further, he remarks, "To this extent I have differentiated it from a universal concept of energy, in accordance with my belief in the right of biology and psychology to develop their own concepts. In adopting this usage I do not wish in any way to forestall the workers in the field of biodynamics. I only announce my intention to use the term libido for our purposes; for theirs, such a term as bio-energy, or vital energy, may be preferred." Jung admits that "nowhere more clearly than in relation of sexuality to the whole psyche can we see how the disappearance of a quantum of libido is followed by the appearance of a corresponding value in another form," and so proves the principle of the conservation of energy in psychic as well as physical matters. He says that in other cases "it may be that a considerable sum of libido disappears as though completely swallowed up in the unconscious, no new value factor appearing in its stead. In such a case it is well to hold strictly to the principle of equivalence, for a careful observation of the patient will soon reveal signs of unconscious activity, as, for example, in the increase of certain symptoms, or a new symptom, important dreams, or peculiar, fleeting phantasy-fragments or the like." Jung insists that there is a certain final causality regarding psychic matters. It is here that he wanders into mysticism and is not easy to follow. He says, "According to the concept of finality, causes are understood as means to an end. A simple example is the process of regression. Regarded causally, regression is determined, for example, by 'mother fixation.' But from the final standpoint the libido returns to the mother-*imago* in order to find there the memory associations by means of which further development can take place, as, for instance, from an emotional system into an intellectual system. The first explanation exhausts itself in the importance of the cause, and completely overlooks the final importance of the regressive process. From this angle the whole edifice of culture becomes a mere surrogate due to the impossibility of incest. But the explanation offered by the final concept allows us to foresee what will follow from the regression and, at the same time, it helps us to understand the significance of the memory images which have been reactivated by the regressive libido."

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We can see from this that Jung has left the everyday world of medicine, where the "cause" of a fractured skull is a blow on the head, for a more or less metaphysical point of view which is difficult to correlate with medicine. He is suggesting that the patient has become ill (*i.e.* regressed) in order to become well. Now, it must be admitted that in medicine it is often very difficult to differentiate the illness from the cause, and Jung has a perfect right to use his own point of view if it is of value. We see his point of view extremely simplified in the way we regard "fever." Are we to regard the high temperature which a patient has with, let us say, typhoid fever as part of the disease, or as a reaction of the body which is attempting to rid the tissues of the invading bacteria? "Regression" for Freud is the illness, but for Jung it is an attempt on the part of the mind to discover a solution for the difficulties in which it finds itself.

Jung wrote the first part of his "Psychology of the Unconscious" when he was still an associate of Freud, and so consequently we do not find in it a great departure from the psychoanalytic view, although he is already beginning to deviate. He starts off by apparently accepting the idea that culture is the result of sublimation of incestuous wishes (which we see, from the previous quotation, he later abandoned), and, moreover, he agrees that the idea of a god is essentially the projection of a painful complex, but he suggests that in religious matters the projection is not an ordinary one. He says, "The religious projection offers a much more effectual help (than neurotic projection). In this one keeps the conflict in sight (care, pain, anxiety and so on) and gives it over to a personality standing outside of one's self, the Divinity," and again, "One must give the burdening complex of the soul consciously over to the Deity: that is to say, associate it with a definite representation complex which is set up as objectively real, as a person who answers those questions, for us answerable," and he says that "these measures aim at a conscious recognition of the conflicts, thoroughly psychoanalytic, which is also the *sine qua non* of the psychoanalytic condition of recovery." One cannot help being surprised at a confessed psychoanalyst writing thus. He does not say how the poor penitent is going to recognise his complex, which is, of course, unconscious, nor how, when it is made conscious, it is to be projected. A complex cannot be made

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conscious unless the resistance can be overcome. This, usually, cannot be effected without the help of an analyst, nor is projection ever a conscious mechanism. Jung appears to have been very confused in his thinking when he wrote this. Freud had, moreover, previous to Jung, suggested that projection (as an unconscious mechanism) was the basis of the idea of a god. It does not seem necessary to invent any other new type of projection for the purpose. Having produced his god by means of projection, Jung then pointed out, quite correctly, that this god may be symbolised into various types of gods—sun gods and so on. It can also be split into good gods and bad gods (devils). It is important to note that for Jung "God is to be considered as the representative of a certain sum of energy (libido)." This is an important deviation from the Freudian point of view of libido as being a bodily or psychic craving.

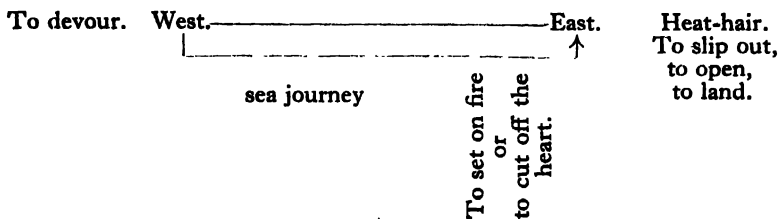
In the second part of his book Jung states his new conception of libido outright. He abandons Freud's conception absolutely as too narrow and fruitless. He says (of his own standpoint), "It regards the multiplicity of instincts as issuing from a relative unity, the primal libido; it recognises that definite amounts are split off, as it were, associated with the newly formed functions and finally merged in them." Having broken completely away from Freud, Jung appears to have felt freer to theorise. He lets himself go. He started to elaborate the idea of unconscious thought being identical with archaic thought, and insists that in regression the fantasies are identical with those of primitive people.

He points out how the fantasies of the insane are filled with ideas which correspond in a remarkable way with primitive myths, and says, "As a matter of fact, patients substitute fantasies for reality, fantasies similar to the actually incorrect mental products of the past, which, however, were once the view of reality." He therefore argues that by studying the myths of the past he is really studying the unconscious, or rather the libido, in the sense in which he uses the term.

He first points out how sexuality was identified with fire partly because of its early association with friction, and how in certain religions fire is produced ceremonially in this way. He then points out that the libido which is turned in a sexual direction is there-

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fore identified with fire. This is, of course, evident in everyday speech, as in "the fires of love." But, more than this, he believes that in mythology the libido tends to be personified into the form of a hero, a conqueror or a demon. He argues that when the hero in a myth passes through various adventures it is a symbolisation of the transitions of the libido. He found in myths symbolism of returning to the womb and of being reborn, and points out that a large number of myths, from widely separated nations, have almost identical contents. This was explained by Elliot-Smith as being due to the spread of one original myth by the scattering of nations and migration. Jung insists that this is not so—that different people, no matter in what part of the world they have originated, tend to think in the same way and to symbolise things in the same manner. For instance, one general plan of one type of myth is as follows: A hero who is or represents a sun god is enclosed in a boat or box, and journeys during the night on the sea, where he is threatened with various dangers. He is often accompanied by a woman. After travelling over the ocean he eventually escapes. This is believed to symbolise a return to the womb and eventual rebirth. It has even been found possible to construct a general plan of this type of myth.



An example of this legend is shown by the quotation which Jung makes from Frobenius. "A hero is devoured by a water monster in the West (to devour). The animal carries him to the East (sea journey). Meanwhile, he kindles a fire in the belly of the monster (to set on fire), and since he feels hungry, he cuts off a piece of the hanging heart (to cut off the heart). Soon after he notices that the fish glides upon dry land (to land): he immediately begins to cut open the animal from within outwards (to open), then he slides out (to slide out). In the fish's belly it has been so hot that all his hair has fallen out (heat-hair). The hero fre-

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quently frees all who were previously devoured (to devour all) and all now slide out." Legends like those of Jonah and of Hiawatha show some of the features of this type of myth, which might be called the rebirth myth. The myths of Osiris, in which he is enticed into a chest or box, and, after completing his night journey over the sea, comes to rest in the branches of a tree which grew up around it, contain some of the elements of this archaic myth.

It is impossible to recount here all the hundreds of myths which Jung assembles so brilliantly to uphold his theories. He seems to have access to every possible source of mythological literature and to have utilised his material in a masterly fashion. There is no doubt that we must accept as valid much which he describes.

He points out how the hero (libido) battles for deliverance and eventually breaks free from the mother. The mother may be represented as being terrible and devouring as well as gentle and kind.

He says, "Man leaves the mother, the source of the libido, and is driven by the eternal thirst to find her again, and to drink renewal from her; thus he completes his cycle, and returns again into his mother's womb. Every obstacle which obstructs his life's path, and threatens his ascent, wears the shadowy features of the 'terrible mother' who paralyses his energy with the consuming poison of the stealthy, retrospective longing. These are images which belong to the intuitive depths of human feeling, the features of which have become mutilated and unrecognisable through the progressive development of the surface of the human mind. The stern necessity of adaptation works ceaselessly to obliterate the last traces of these primitive landmarks of the period of the origin of the human mind, and to replace them along lines which denote more and more clearly the nature of real objects."

Many myths demonstrate a sacrifice, and this Jung believes is the sacrifice of the incestuous libido or retrogressive longing, in order that development may take place, and the sacrifice of animals which is so common in myths is said to be the sacrifice of animal nature.

He makes his ideas clear about the unconscious in the following passage. He says, "The sexuality of the unconscious is not what it seems to be; *it is merely a symbol*; it is a thought bright as day, clear as sunlight, a decision, a step forward to every goal of life—

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but expressed in the unreal sexual language of the unconscious, and in the thought form of an earlier stage ; a resurrection, so to speak, of earlier modes of adaptation." This is vastly different from the Freudian idea of the unconscious, which is believed to be timeless and changeless (unless interfered with, as in analysis), and, in addition, Jung suggests that the unconscious is a place where an attempt is being made to overcome the present difficulties. An important part of Jung's psychology is taken by the idea of archetypes, and he frequently used the discoveries which he has made in the field of mythology to interpret dreams, and does so without free-association in some cases, or is able to utilise these known symbols in cases where free-association is unsuccessful. Jung uses the principle of the archetype or, as he sometimes calls it, the primordial image, to explain the universality of a symbol. Archetypes tend to be constructed by constantly recurring situations. He says, " How is it, then, you may ask, with the most everyday, intimate and immediate events, with husband, wife, father, mother, child ? These customary and eternally repeated facts create the most powerful archetypes of all, the ceaseless activity of which, even in our rationalistic times, is everywhere immediately evident. Take, for example, the Christian dogma. The Trinity consists of God the Father, Son and Holy Ghost, the latter being represented by the bird of Astarte, the dove, which was actually called Sophia in the early Christian times and thought of as feminine. The worship of Mary in the latter Church is an obvious substitute for this. Here we have the archetype of the family, *ἐν ὁυρανίῳ τόπῳ*, ' in a heavenly place,' as Plato expresses it, enthroned as the formulation of the ultimate mystery. Christ is the bridegroom ; the Church is the bride ; the baptismal font is the womb of the Church, as it is still called in the text of the *Benedictio fontis*. The holy water has salt put into it—with the idea of fertilisation or making it like the sea. A hierosgamos or holy wedding is celebrated on the holy Sabbath in the service just mentioned, and a burning candle as a phallic symbol is plunged three times into the font, in order to fertilise the baptismal water and lend it the qualities necessary to give a new birth to the child baptised." According to Jung, these ideas of a god being a father, or rebirth, and so on are primordial images which recur again and again in religious symbolism. A good example of this is to be

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found in the idea of washing away sins. Long before the Christian religion formulated the idea of being washed in the blood of the Lamb, sins were being washed away by the blood of a sacrificed animal—the priests of Mythras were washed in the blood of a sacrificed bull. This idea of washing away sins is, therefore, a

STRATA OF THE MIND ACCORDING TO JUNG

CONSCIOUS	SENSATION	Threshold of consciousness
	THINKING	
	FEELING	
	INTUITION	
	MEMORY	
	SUBJECTIVE COMPONENTS	
	AFFECTS	
	INVASIONS	
UNCONSCIOUS	INDIVIDUAL UNCONSCIOUS	
	RACIAL UNCONSCIOUS	

Note.—Affects mean emotions. Invasions are symptoms.

primordial image. Jung regards this tendency to react always in the same way as akin to instinctive behaviour—that is to say, unlearned behaviour common to a race, and which is apparently purposeful.

The manner in which a weaver bird hatched out in an incubator is able to tie intricate knots which it has never had an opportunity

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to learn by experience is a good example, and really shows a certain kinship to the archetypical thinking. Jung believes that the unconscious is a deposit of all human experience back to its remote beginnings: "Not merely a dead imprint—a sort of abandoned field of rubbish—but a living system of reactions and aptitudes determining the individual life in invisible ways; and because invisible all the more effective. . . . Archetypes are merely the forms that the instincts have assumed."

Man has therefore the capacity to inherit, not innate ideas, but tendencies to think along certain lines, and these inherited tendencies are unconscious. This leads at once to the supposition that there are two systems in the unconscious. Firstly, there are the events which have occurred in the lifetime of the patient, and which have been repressed. This Jung calls the personal unconscious. Secondly, there is this system of inherited tendencies—archetypes or primordial images—which form the collective or racial unconscious.

Jung explains how the collective unconscious can produce symptoms in the following manner. He says in the case of a neurosis being dependent on a deficiency on the part of a patient's mother: "Where the individual's mother is lacking in this or that respect, a certain loss is felt, which represents a claim of the collective unconscious for fulfilment. One instinct has short measure, so to speak. From this cause neurotic disturbances frequently arise, or at least peculiarities of character. If the collective unconscious did not exist, anything could be accomplished by education. It would be possible with impunity to deform a human being into a psychical machine, or transform him into an ideal. But strict limits are set to any such attempts, because there are dominants of the unconscious which make almost invincible demands for fulfilment. If, then, I am asked to name the thing in the unconscious, over and above the personal mother-complex, that keeps alive an indefinite but painful longing, the answer is: it is the collective image of the mother; not of this particular mother, but of the mother in her universal aspect."

It is in the thinking of the insane, where the unconscious seems to have burst its bounds and flooded over into consciousness, that we find the clearest evidence of this type of thinking which Jung calls archetypical. I have had under my care insane patients

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who seemed to be living in a mythological world. One woman insisted that she was the "mother of all living things," and that the whole population of the world was born of her. It is not at all unusual for patients to insist that they created the world, and I once found a patient struggling with a nurse, who was trying to prevent her from destroying the ward Bibles. Her excuse was that as she had written the Bible, she had every right to destroy it if she desired to do so. It was only when the difficulty which would be caused in the interim between the destruction of the Bible and her rewriting it was pointed out that she was persuaded to rewrite the new Bible before she destroyed the old one.

The Jungian archetypes must occasionally take curious forms, because one often finds a female patient complaining that the mental hospital is a brothel, and it is difficult to explain this on Jung's principles!

We must now turn from the study of the unconscious, interesting though it is, and full of mysteries and curious dusty corners, to other of Jung's discoveries. These, fortunately, we shall not find so obscure, and they are much easier to understand than the rather metaphysical point of view which he brings to the study of the unconscious. It is his description of the different psychological types that we must now study. To this he has brought his vast knowledge and his questing mind. He was not the first to study the different classes into which the human mind can be differentiated—indeed, this has been an interest of philosophers since the earliest times. The American psychologist, William James, divided men into two types, which he called the tough and the tender. Schiller classified human beings into the idealists and the realists. An English physician, Furneaux Jordan, divided them into the more impassioned and the less impassioned. We can discover similar classifications in the writings of the philosophers of the Middle Ages and earlier. Jung was, of course, well aware of this when he started the study of human types, and utilised this knowledge to support his contentions.

He divided human beings firstly into two types, according to the "direction of general interest or libido movement." They were either introverts or extraverts. He says, "The general attitude types, as I have pointed out more than once, are differentiated by their peculiar attitude to the object. The introvert's attitude to the

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object is an abstracting one ; at bottom, he is always facing the problem of how libido can be withdrawn from the object, as though an attempted ascendancy on the part of the object had to be continually frustrated. The extravert, on the contrary, maintains a positive relation to the object. To such an extent does he affirm its importance that his subjective attitude is continually being orientated by, and related to, the object. *Au fond* the object can never have sufficient value ; for him, therefore, its importance must always be paramount." Put into simple language, this means that the extravert has turned his interest outside himself and the introvert has turned his interest inside himself. One is objective and the other is subjective. The extravert is in close contact with his surroundings, the introvert imposes a veil of his own personality between himself and reality. Jung describes the extraverted attitude as this : "When the orientation to the object and to the objective facts is so predominant that the most frequent and essential decisions and actions are determined, not by subjective values, but by objective relations, one speaks of the extraverted attitude. If a man so thinks, feels and acts, in a word so *lives*, as to correspond *directly* with objective conditions and their claims, whether in a good sense or ill, he is extraverted. His life makes it perfectly clear that it is the objective rather than the subjective value which plays the greater rôle as the determining factor of his consciousness. He naturally has subjective values, but their determining power has less importance than the external objective conditions. Never, therefore, does he expect to find any absolute factors in his own inner life, since the only ones he knows are outside himself. . . . His entire consciousness looks outwards to the world, because the important and decisive determination always comes to him from without. But it comes to him from without only because that is where he expects it."

The introverted type is practically the opposite. "Introverted consciousness doubtless views the external conditions, but it selects the subjective determinants as the decisive ones . . . the introvert principally relies upon that which the outer impression constellates in the subject. The introverted attitude is normally governed by the psychological structure, theoretically determined by heredity, but which to the subject is an ever-present subjective

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factor." Since the introvert turns his libido internally, he naturally tends to activate the primordial images or archetypes. He thinks, therefore, much more in terms of symbols than in terms of objects. He tends to over-value the subjective experiences and to neglect objectivity.

It is to be expected that the members of these two great groups should find difficulty in understanding one another. They are like members of different nations who speak languages which can be partly understood by both, but complete understanding is not usually attained. Naturally the difficulty in complete understanding leads members of one group to despise those of the other. To the extravert the introvert is a dreamy fellow who will not "get on with the job," while to the introvert the extravert is merely a clumsy boor with no understanding of anything other than base material facts.

Jung was not satisfied to divide the mind of man into these two great types. He said that the types which he described only depicted their conscious attitudes. He therefore studied their unconscious attitudes, and came to the conclusion that the unconscious attitude was diametrically opposed to the conscious attitude. It had, so he believed, a certain compensatory value. The extravert has therefore an unconscious introverted attitude—an unconscious tendency to emphasise the subjective factor. The introvert, on the contrary, has an unconscious leaning to accentuate the subjective factors. One might have thought that Jung would have been satisfied with this system, and some authors—such as Culpin—think that it would have been better if he had not elaborated it still further. He was, however, able to find other subgroups which he thought were dependent on the preponderance of certain basic psychological functions. These functions are : thinking, feeling, sensation and intuition.

We have therefore eight types. 1. Extraverted thinking type. 2. Extraverted feeling type. 3. Extraverted sensation type. 4. Extraverted intuitive type. A similar group is composed of four introverted types.

Extraverted Thinking Type.

This is a type of man who tends to think in terms of objectivity. He prefers to deal with things which he can handle rather than

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with theories. When he uses theories it is to gain greater power over the objects. He is usually an engineer or surgeon, but should he have less objective matters such as the law, he sees these also from an objective point of view and is inclined to regard them as inflexible. It is this type which makes the cast-iron moralist, and his lack of feeling allows him a harshness which may appear shocking to a character built on another plan. Since this type of thinker tends to keep "down to brass tacks," he is inclined to be destructive in his thinking, except when he is dealing with objects. Charles Darwin was typical of this group.

Extraverted Feeling Type.

The emotion in this type of mind is determined, as in all extraverts, by the object. This is the person who feels depressed by the fact that it is a dull day (the introverted feeling type would make the dull day a beautiful one because of the inner happiness). It is a person who is easily influenced by surroundings and who tends to value things on the basis of the feelings which the object inspires. "If it makes me feel good, it is good," is the attitude.

Extraverted Sensation Type.

Jung says of this type that "no other human type can equal the extraverted sensation type in realism. His sense for objective facts is extraordinarily developed. His life is an accumulation of actual experience with concrete objects, and, the more pronounced he is, the less use does he make of his experience." According to Jung this type tends to predominate in men, and includes the majority of them. He says that this type "knows no better use for this sensed 'experience' than to make it serve as a guide to fresh sensations; anything in the least new which comes within his circle of interest is forthwith turned to a sensational account and is made to serve this end." This type is shown by the lovers of good wine, good food and lovely women. "Eat, drink and be merry" is his motto, and he does not even bother that "tomorrow he must die."

Extraverted Intuitive Type.

It is well worth while in discussing this type to define intuition, because, although we all know what is meant by thinking and

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feeling, intuition is used by different people in different senses. By intuition is meant unconscious perception. The components of this type are men or women who utilise their intuition to discover external possibilities. This type is said to predominate in women rather than men. When a woman is of this type she may display a remarkable aptitude to do the right thing for her success. She knows unconsciously the right social group with which to mix, the right clothes to wear, the things to say, and even the right men to love. When men belong to this group they tend to become merchants, contractors, speculators, politicians and others who profit by knowing without being told "which way the wind will blow."

There are four introverted types which correspond to the extraverted ones.

Introverted Thinking Type.

The introverted thinking type is strongly influenced by ideas ; not ideas which are founded in objective data such as the enumeration, correlation and selection of natural facts. The man of this type follows his ideas, but inwardly rather than outwardly. This group includes philosophers like Kant and Nietzsche. The political fanatics who delight in theories and expound them at great length, no matter how ruthless and appalling are the conclusions to which they are forced, are of this type. Jung says, "Although in the extension of his world of ideas he shrinks from no risk, however daring, and never even considers the possibility that such a world might also be dangerous, revolutionary, heretical and wounding to feeling, he is none the less the prey to the liveliest anxiety, should it ever chance to become objectively real." This type is often gauche, ill-dressed, and his *naïveté*, or taciturnity, may make it difficult for him to mix freely with others.

Introverted Feeling Type.

Women predominate in this type, and they are of the silent sphinx-like nature who are inaccessible and with whom it is difficult to make contact. It is always hard to understand the true motives which are behind their actions, since they are controlled entirely by concealed emotion. They are sympathetic, reposeful, inconspicuous and harmonious in their nature. Out-

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wardly they are indifferent and show no emotion, but behind their coldness and apparent *sangfroid* they have locked away a flaming furnace of emotion.

Introverted Sensation Type.

In this type there is a disproportion between the object and the sensation and, as Jung says, " Judging from without, therefore, it is practically impossible to foretell what will make an impression and what will not. . . . Normally, the object is not consciously depreciated in the least, but its stimulus is removed from it, because it is immediately replaced by a subjective reaction which is no longer related to the reality of the object," and again, " Above all, his development estranges him from the reality of the object, handing him over to his subjective perceptions, which orientate his consciousness in accordance with an archaic reality, although his deficiency in comparative judgment keep him wholly unaware of this fact. Actually he moves in a mythological world, where men, animals, railways, houses, rivers and mountains appear partly as benevolent deities and partly as malevolent demons. That thus they appear to him never enters his mind, although their effect upon his judgments and acts can bear no other interpretation." This is not so clear-cut as the others which Jung has described, but, nevertheless, it may correspond with a certain type, mainly artistic in nature, which treats the outside world in the manner in which he suggests.

Introverted Intuitive Type.

Those of this type are absorbed in archetypal thinking. They are the prophets, the dreamers who become lost in mysticism and the crank with his monstrous schemes ; the inventor of perpetual-motion machines, and the artist who is lost in his fantasies, and the poet who is always dreaming of the immortal scenes which will compose the epic which he will never write. A man of this type is by means of his intuition often able to discern the value in the more extravagant schemes—perhaps such things as companionate marriage or nudism—and by the very persistence of his championship will win some recognition. He is, as Jung says, " frequently an unappreciated genius, a great man ' gone wrong,' a sort of wise simpleton, a figure for psychological novels." Because his know-

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ledge is intuitive he finds it difficult to convince others of the validity of his thoughts and beliefs. He is a champion of lost causes, a voice crying in the wilderness.

Jung makes his schemes even more complicated by stating that when a man is of one type it is due to the repression of an opposite character. Sensation is repressed in the intuitive types and vice versa, and again, when thinking is prominent, feeling is repressed, and so on.

It must be remembered that these are mere descriptions of various types of mind. One gathers from these descriptions that they are not some mental state produced by the patient's reactions to his environment. They are static, and not dynamic. This is unfortunate, since it reduces their value in treatment. Jung gives various neuroses which he says the various types tend to favour. For example, the extraverted feeling type is said to be liable to hysteria, whereas the introverted feeling type is likely to have neurasthenia and so on. It is difficult to know how far this is true, but one may suspect that hysteria and manic-depression * are commoner in the extraverts, while neurasthenic illnesses and schizophrenic reactions tend to occur more frequently in the introverts.

One might think that a foreknowledge of the type of illness which might occur in a patient would be very valuable in the prevention of it. This is not necessarily true, since it is by no means easy to persuade an introvert to mix with people and behave in a more extraverted fashion. Nor can the extravert necessarily be persuaded to be more introverted. It is by no means proved that it is beneficial to try to persuade either of these types to be the opposite, although it is usually taught that it is so.

We now come to a consideration of Jungian analysis and its differences from the analysis of Freud. It must be admitted that it is not clear how much of value Jung has added to the technique of Freud. Apparently he utilises the usual free-association, but he analyses the transference in terms of mythology and explains things from this point of view. Wittels criticises him aptly in saying, "All the workers in this school busy themselves to show that mental patients and neurotics reproduce in every detail the

* Manic-depression is the scientific name for attacks of depression or elation which may occur alternately.

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myths, cosmogonies and primitive conceptions of the early ages of man. They endeavour to turn the discovery to practical account. They track out such archaic images in the minds of their patients and expound these images to the latter. I find it hard to understand what benefit a patient can derive from being told, 'There it is once more. This idea of yours represents the Aztec god Vitzliputzli.' Presumably, the patient will be somewhat astonished, and perhaps crestfallen to learn that his thoughts have been straying along such outworn paths. But how can it help him (I paraphrase Ferenczi's apt criticism) to have one unknown, his own aberrant self, explained in terms of another unknown whose name is Vitzliputzli? "

That this can be carried to absurd lengths is shown by an amusing story which Adler told the writer. It was concerning a patient who had been treated for some time by Jung and who complained that he had a snake in his inside. Adler thought that this must be an insane delusion and questioned him sympathetically regarding it. "How do you know that there is a snake there?" he asked. "Because Professor Jung told me so," the patient replied. Alas, it was only a mythological snake!

Jung apparently adds to the Freudian method this mythological technique which he calls psychosynthesis. It appears to be mainly religious education and, if one can believe his latest books, persuading the patient to learn to paint his fantasies on paper. It has been pointed out earlier in this chapter that Jung has a strong religious bias and has tried to bridge the gulf between religion and psychology. He actually states that it is the priest rather than the doctor who is most concerned with the problem of spiritual suffering. We must remember, however, that the patient is ill because of repressed emotion, and religious interference is likely to increase the repression. Although I am not unsympathetic towards religion, I feel that the priest is more dangerous than helpful to the mentally ill. Religion has as much (and no more) connection with the treatment of the neuroses as it has with the treatment of pneumonia. With regard to Jung persuading his patients to paint, there is no doubt that this is a valuable method of eliciting fantasies, but it is useless—as the dream is useless—unless the patient free-associates and discovers the meaning of the fantasy. One wonders how many of Jung's patients really do this.

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I cannot see that Jung has added very much to the treatment of neurosis, and this opinion is shared by many other practising psychiatrists.

A patient of Freud's gives the following description of a Jungian analysis: "Not the slightest effort was made to consider the past or the transferences. Whenever I thought that the latter were touched, they were explained as a mere symbol of the libido. The moral instructions were very beautiful, and I followed them faithfully, but I did not advance one step. This was no more distressing to me than to the physician, but how could I help it?—Instead of freeing me analytically, each session made new and tremendous demands on me, on the fulfilment of which the overcoming of the neurosis was supposed to depend. Some of these demands were: inner concentration by means of introversion, religious meditation, living together with my wife in loving devotion, etc. It was almost beyond my power, since it really amounted to a radical transformation of the whole spiritual man. I left the analysis as a poor sinner with the strongest feelings of contrition and the very best resolutions, but at the same time with the deepest discouragement. All that this physician recommended, any pastor would have advised, but where was I to get strength?"

Although we must take this statement *cum grano salis*, yet it does certainly uphold the contention that the admixture of religion with analysis is worse than useless. In the writer's opinion it is very frequent that persons with a religious turn of mind become neurotic, and in their case their religious interests are no safeguard. It seems futile, therefore, to attempt to mingle religion with analysis. It must be remembered that analysis is an attempt to release emotion which has been locked away in the patient's unconscious mind. Religion is a matter of the conscious mind. It is possible to cure a neurotic without ever touching on his religious beliefs, and to my mind this should be the analyst's aim. To religion certain things are sinful and unclean, but to the analyst there is nothing wicked in the patient's infantile desires. In the analyst, as in any other physician, his material should arouse no emotion. Even in his latest book Jung shows that he still feels a certain amount of disgust at the matter which he sometimes finds himself forced to face, and it would appear that he takes refuge in religion in order to avoid facing it. The danger to which Jung

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appears likely to succumb is that of mysticism. Mysticism is a grave pitfall for a scientist. It leads him into unclear thinking and entices him away from the study of cold facts as such. He says, for example, "For thousands of years, rites of initiation have been teaching spiritual rebirth; yet, strangely enough, man forgets again and again the meaning of divine procreation. This is surely no evidence of a strong life of the spirit; and yet the penalty of misunderstanding is heavy, for it is nothing less than neurotic decay, embitterment, atrophy and sterility. It is easy enough to drive the spirit out of the door, but when we have done so the salt of life grows flat—loses its savour. Fortunately we have proof that the teaching of ancient initiations is handed on from generation to generation."

Such sentences might have been written by a mystic rather than one who claims the title of scientist.

I have tried to criticise Jung's work honestly, and it seems necessary to condemn much of his analytical therapy as redundant, but it must not be thought that his work as a whole is being deprecated. His description of the psychological types is a valuable one, and, although it is probable that they are more a product of the environment than he appreciates, it does not detract from their descriptive value. Again, there is no doubt that his extensive studies in mythology will always keep his name fresh in the minds of psychologists.

One cannot, however, admit that Jung has brought anything new to the therapy. He has rather spoiled the beautiful scientific technique of Freud, which it is difficult for those who are not psychotherapists to appreciate, by the addition of a hotch-potch of religion and mythology which cannot act in any other manner than as suggestion. Inasmuch as he does this, he abandons Freud's discoveries and regresses to the days of Mesmer.

CHAPTER EIGHT

KRETSCHMER AND THE RELATION OF BODY AND MIND

WE have seen how the discoveries of Mesmer led on inevitably to those of Janet, and Janet's were followed by Morton Prince's and Freud's. From Freud the line bifurcates into two: Adler and Jung. We shall see that, although Kretschmer follows naturally upon Jung, he does so upon the discovery of psychological types rather than his work on the unconscious mind—we have another branch of the tree rather than the same branch. Kretschmer is really the heir of the great German tradition of clinical psychiatry which reached its zenith with Kraepelin. We have seen that the interest of Freud and his school, as well as his derivatives, has been in the subjective. What the patient feels and experiences, or what he had felt and experienced, formed the material of their study. The patient's physical structure was not of interest except when it had some relation to the emotions, as was the case when he was too short, tall, thin or fat. It was not until the advent of Kretschmer that the possibility of any correlation between mind and body was dreamed of, and no attempt to study this problem had been made.

Ernst Kretschmer is a man of middle height, shy in manner and rather of the *petit bourgeois* type, but without doubt a great clinical psychiatrist. He is aged about sixty-six, and was for many years assistant professor at Tübingen. He later obtained the professorship at Marburg. Kretschmer's thinking seems to be clearer and more logical than that of either Jung or Adler, and, although this may be partly because he is dealing with more malleable material, he does seem to be less intuitional and more scientific in his outlook. It is, however, this insistence on factual proof that one finds inevitable in his work which hinders the free speculation which makes the work of others more fascinating, if less reliable. We must not expect, therefore, anything spectacular in his discoveries.

We cannot give Kretschmer credit for being the first to try to

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divide human beings into different physical types, since attempts have been made to do this from the time of the Greeks. Clinicians have used a system of dividing human beings into types, and these have been fairly accurately described, so that it is easy to identify a man as a lymphatic, an exudative, an arthritic type, etc., although it may be doubtful whether the type causes the disease or the disease causes the type. The French used a description which involves a division into four groups: cerebral, respiratory, muscular and digestive. Most of this typing is rather arbitrary, and constructed from the point of view of what is expected. The patients are pushed into classifications which have been made for them rather than from them; the scheme was made first and the patients fitted in afterwards rather than vice versa.

Kretschmer tried to correct this error by studying his patients and then elaborating from them the system of classification which he uses. He insists that a pure type is unusual, and that one cannot detect the group into which a man fits without careful measurements and without considerable familiarity with this kind of work. He states that the person who shows all the characters of his type so that he stands out as a perfect specimen is in reality a great rarity. We shall notice, however, that men of genius usually show well-marked characters, and will be well worth our study. Women do not show marked differentiation in the external characteristics, because the bony framework is often obscured by the more generous covering of fat which is to be found on them, but, Kretschmer insists, the actual bony structure is the same for each type, as in men.

The first which Kretschmer describes is the "asthenic" type. The best way of impressing this type upon the reader is to point out that the traditional figure of the Devil possesses all the characteristics associated with it. The asthenic is long and thin, with a sharp, protruding, pinched-looking nose and a poorly developed lower jaw, giving the peculiar angulated profile which caricaturists delighted to give the Crown Prince of Germany during the First World War. The asthenic's body is like his face—long and thin. His thinness gives his lean, tall frame a suggestion of great height. The second is the "athletic" type. Those who belong to this tend to resemble the weight-lifter of the circus, the professional strong man. (Indeed, one frequently finds those of this type—

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whose frame and muscles are *not* acquired by exercise, however they are said to have been developed—practising the avocation of physical culturist.) Men of this sort have very powerful frames upon which are found magnificent muscles. The face is heavily boned, with a firm chin and slightly *retroussé* nose. The athletic type of man is the sculptor's delight.

Kretschmer describes the third—the “pyknic” type—almost lovingly (so that one wonders whether he has found that he himself ~~is~~ is a member of it!), and one must admit that there is something very attractive about its members, although it is a mental rather than a physical character which is so pleasing. The pyknic is best represented by the type of innkeeper or jolly monk which delights the artists who draw the illustrations for Christmas cards. He is of middle height, with a plump, ruddy, round face set on a massive neck. His body is rotund, and he shows a strong tendency to develop a “magnificent fat paunch.” The pyknic's face is distinguished from that of the athletic, which is a long oval, and the asthenic's, which is a short oval, by being shaped rather like a shield with five corners. The general impression of the pyknic is that of merry good nature and friendliness.

Kretschmer was too wise to try to crush everyone into the same mould, and created a fourth type, into which he placed the “misfits.” This group, which he calls the “dysplastic” types, is composed mainly of those suffering from glandular diseases which influence the growth of the body.

It would be quite reasonable for the reader to object that the subject under discussion was supposed to be psychology, and that a great deal of time is being wasted upon physical characteristics. It is not necessary to be impatient, since we shall now turn our attention to the temperaments, and we shall see later how they can be correlated (if one believes Kretschmer) with the physique in a remarkable manner.

Kretschmer divides the temperaments into two types. They correspond somewhat with Jung's introverted and extraverted types, but Kretschmer's conception is a wider one or, perhaps one could say more truthfully, a more objective one, since it is correlated more with actual persons. Introversion is the characteristic of what he calls the “schizoid” type, and extraversion that of the “cycloid” type. It might be asked, “What is the

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good of dividing people into this or that type? We are no better off when we know." This is, of course, a very superficial view, since the mental or nervous illness which one develops if one becomes ill in this way is dependent upon the psychological make-up, and the chance of recovery or relapse is intimately bound up with the kind of illness. It might be well in this connection to diverge a little into clinical psychiatry. It must be realised that before the advent of Kraepelin the study of the insane was chaotic. Mental illness was divided into diseases of the will, the emotions and the intellect. Where the will ended and the emotions began no one knew, and the effect of the emotions on the intellect or vice versa was equally obscure. Nor could anyone explain why diseases of the emotions—such as melancholia—sometimes caused lack of will-power and so on. Instead of building a system and trying to fit mental disease into it, Kraepelin studied patients and built his theories from them. He noticed that there were two large groups of patients: firstly, those who had recurrent attacks of depression or elation; and, secondly, those who had delusions and hallucinations—the popular idea of an insane person. The patients who had recurrent emotional aberrations had a very strong tendency to recover, while those who developed delusions had a marked tendency to stay ill. This conception has not been altered much with the passage of time, except that we are less pessimistic about the latter group.

We can now see the importance of Kretschmer's groups. The cycloid group are those people who if they should become insane will develop the recurrent attacks of depression or elation (called technically manic-depression), whereas the schizoid group is composed of those people who if they become insane will develop delusions and hallucinations (the illness called technically schizophrenia).

(Kretschmer calls normal persons who have a temperament of the schizoid type "schizothymes," and those who show the cycloid temperament cyclothymes, but there seems no great advantage in this extension of his terminology.)

The Schizoid Group.

The schizoid shows in his mental construction peculiarities which Kretschmer tabulates as follows:

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1. Unsociable, quiet, reserved, humourless and eccentric.
2. Timid, shy, with fine feelings, sensitive, nervous, excitable, fond of Nature and books.
3. Pliable, kindly, honest, indifferent, dull-witted, silent.

The schizoid may show in youth a very sensitive nature, but he tends to bury his emotion internally and to develop an armour of indifference or humourless harshness against the external world. Kretschmer says that their introversion is often a predominant symptom of their emotional sensitivity. "Such over-excitables schizoids feel all the harsh, strong colours and tones of everyday life, which to the average man and to the cycloid are welcome and indispensable stimulating elements of existence, as shrill, ugly and unlovable, even to the extent of being psychically painful. Their 'autism' (introversion) is a painful cramping of the self into itself. They seek as far as possible to avoid and deaden all stimulation from the outside; they close the shutters of their houses, in order to lead a dream life, fantastic, 'poor in deeds and rich in thought' (Hölderlin) in the soft muffled gloom of the interior. They seek loneliness, as Strindberg so beautifully said to himself, in order to spin themselves into the silk of their souls. They have regular preferences for certain forms of *milieu* which do not hurt or harm; the cold, aristocratic world of the salons, office work which goes on mechanically, according to fixed rules and regulations, the beautiful loneliness of Nature, antiquity, distant times and halls of learning. When a schizothyme like Tolstoi turns from a *blasé*, over-civilised society man into a hermit, the spring inside, regarded from the point of view of the soul of the schizophrenic himself, is not great. The one *milieu* offers him the same as the other, the one thing which he desires above all else from the outer world; the protection of his hyperæsthesia (*i.e.* his sensitiveness)."

Kretschmer believes that there is another kind of person who exhibits the schizoid temperament, and who does not extend any emotional relation to the outside world because he does not feel any interest in it. Unlike the first type, who refuse to make contact with the world around because of the possibility of their extreme sensitiveness being injured, this second type, being cold and unemotional, finds nothing in the surrounding environment to awaken his interest. Kretschmer says, "This disinclination for

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human society varies from the gentlest display of anxiety, timidity and shyness, through ironical coldness and sulky, distorted dullness, to cutting, brutal, active hostility towards mankind. And the most remarkable thing is this: the affective (emotional) attitude of an individual schizoid to his fellow-men changes colour in a strange rainbow-like fashion: now timidity, irony, sulkiness, now brutality. A particularly good characterological example of this type is the schizothyme, Robespierre."

The schizoid is not necessarily always harsh and hostile, since his extreme timidity sometimes makes him extraordinarily docile and malleable, but there is always difficulty in forming contact in a complete sense. This gentler type includes those who lose themselves in books or Nature. The third type of schizoid attitude is to be found in the hard business man—the cold, calculating, scheming man whose social contacts may seem to contain a certain amount of emotion, but in reality are superficial. A similar type is to be found in those who devote themselves altruistically to some cause, great or insignificant, but it is made more noble by the unswerving sacrifice which is made.

Examples of Kretschmer's Schizoid Types. Group I. The Predominately Hypersensitive Type.

Perhaps the best example of this type of schizoid can be found in the Dutch painter Vincent van Gogh. This man appears to have been physically of the athletic physique. He attempted, first of all, to enter the Church, but was rejected. He then went as an unofficial evangelist amongst the Belgian coal-miners. He had been promised that, if he were successful, he would be admitted to the Church. In the Borinage, the district where the miners lived, van Gogh did everything possible to improve the conditions under which the people existed. He gave away all his clothes and starved himself because he felt the misery of the poor miners and their families. When a committee of inspection came to review his work he was found to be sleeping on straw and clothed in rags. He was not appreciated, and consequently not accepted as a minister. He then decided to become a painter and, supported by his brother Theo (perhaps the only other person who ever understood him), studied for ten years, selling practically nothing, but toiling on undaunted. He exploited a masterly post-im-

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pressionistic technique and painted away frantically. Finally he developed, whilst still a comparatively young man, a schizophrenic illness during which he shot himself. The letters he wrote to his brother show that he was really extraordinarily sensitive. He starved himself again and again to buy paints and canvas. His sexual life was disordered; he took pity on a prostitute, and lived with her, to the scandal of the van Gogh family. His unswerving devotion to one art is a typical schizoid trait.

This type can reach sublime heights, as van Gogh's own life shows. Similar characters are shown in the case of Abraham Lincoln, and perhaps Mr. De Valera's devotion to the cause of Ireland may be a similar schizoid trait. Both Lincoln and Mr. De Valera show the asthenic type of body, combined with the sharp nose of the schizoid.

The Sensitive, Cold, Aristocratic Type.

Perhaps Don Quixote typifies this kind of schizoid better than any real man. His hauteur and aloofness, which cover a very real sensitiveness, are characteristic. His devotion to chivalry, which was becoming extinct, would, in a real and not a fictitious personage, be strongly suspicious of the schizoid. The Stuart Kings were mostly schizoid, and their inability to win the love of the people in the same way as the cycloid Tudors accounts for a great deal of the trouble which occurred under their rule. One has only to compare the typical schizoid face of Charles the First with the rotund face of Henry the Eighth to see to which type they each belong. The absurd devotion of the Stuarts to the principle of the divine right of kings is a schizoid character similar to van Gogh's devotion to painting, but vastly degraded. Enough has been said to show the kind of people the schizoids are. Now to turn to the cycloids.

Kretschmer describes this group as having the following characteristics:

1. Sociable, good-natured, friendly, genial.
2. Cheerful, humorous, jolly, hasty.
3. Quiet, calm, easily depressed, soft-hearted.

The cycloid has a naturally warm nature, and his friendliness

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is infectious. He wears his heart on his sleeve, and by his cheerfulness can make friends anywhere. He is open and natural, and one cannot help feeling the warmth of his emotional relationships. If he loses his temper there is an outburst of hot-bloodedness which soon subsides ; his indignation must be expressed, and it is unthinkable that he should carry his hatred about and wait for revenge, as would a schizoid. Being extraverted, he makes excellent contact with the outer world, but he has a tendency towards a cheerful, materialistic outlook on life ; he likes food, drink and fine women. He has a great deal of energy, which he is able to turn to practical usage. There is a dash and rush about his work which, combined with his infectious good humour, enables him to get things done which it would be impossible for the colder schizoid to perform or persuade others to do.

This kind of temperament can swing to two extremes : towards mania—a state characterised by elation, great activity and rapid flight of ideas ; or else to melancholia—depression, and poverty of ideation, combined with a lack of activity. Those who have swung to the manic side show tireless energy and astonishing optimism. If they can succeed in holding themselves in sufficient restraint they may achieve remarkable success. Their danger is that they tend to attempt more than they can manage, and consequently never finish anything. If they swing to the extreme, they develop mania, and by showing tireless energy and annoying important personages, soon have to be controlled in hospital.

The other side of the cycloid temperament is the tendency towards melancholia. Even with this type one cannot help feeling some contact. Members of this group do not form good leaders, since they are too tender-hearted, but they form excellent subordinates and are good workmen under supervision. They have a tendency to worry and to be over-conscientious. This is shown in their leanings towards religion, which, however, they accept without bigotry and pedantry, in marked contrast to the schizoids, who are bigots and pedants *par excellence*.

The Manic Type of Cycloid.

Falstaff is probably the best depiction of this characteristic type in fiction. A rotund, jolly, roystering rascal, fond of wine and women. In Falstaff the manic energy which accomplishes so

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much if it is turned in the right direction had been frittered away. Perhaps Mr. Lloyd George is the finest representative of this type at its best. He also presented the rounded pyknic form which is characteristic of the cycloids. The enormous energy which he showed and the terrific enterprises in which he was able to persuade others to co-operate were characteristically combined with a cheery *bonhomie*. The brisk movements and the rapid speech and gesticulation all complete the picture. Mr. Winston Churchill also shows all these characteristics. He has the ability to make himself liked, the dominant energy and love of activity combined with the plump cherubic physique. He is the perfect pyknic cycloid.

On the opposite side we have the other extreme in the melancholic type.

The Melancholic Type of Cycloid.

It is difficult to find a typical example of this type either in fiction or real life. The reason for this is that those who belong to it are not impressive, like the manics. These melancholics pass smoothly and quietly through life without making any fuss or disturbance. They do their work conscientiously, but never reach the top. They go to their "quiet little pub," as Kretschmer says, and they are known to a group of associates with whom they form intimate and happy contact. They are always gloomy souls. Since they do not shine in public life, it is impossible to find a good example, but H. G. Wells has suggested this type in Mr. Polly, whose indigestion and rather depressed spirits are master-strokes of description.

We can now recapitulate what has been described so far. Kretschmer has described three physical types: the asthenic, the athletic and the pyknic. He has two temperaments: the schizoid and the cycloid. His great contribution is the linkage of the physical types with the temperaments. *He believes that the schizoid temperament is mainly manifested by those who possess either an asthenic or an athletic physique. The cycloid temperament almost invariably accompanies the pyknic physique.* It is difficult to express the importance of this contribution to psychology—if it should be confirmed by other physicians in other parts of the world. We must reserve this scientific caution, since Kretschmer

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has worked mainly in Swabia, and his views must be confirmed with other nations than the Swabian.

We have been describing so far the extremes of temperament and physique, but according to Kretschmer these variations in both are discernible in the ordinary man—we must not expect to find them as marked as in the gross deviations which approximate to disease, but they are there if one looks with a critical eye. These minor deviations Kretschmer calls *schizothymes* and *cyclothymes*, but it is impossible to say definitely when a *schizothyme* passes into a *schizoid*, since the intervening gradations are infinitesimal. He states that one can see *cycloid* characters in the ordinary man, and he gives various examples—for instance, “the gay chatter-box” type, “the quiet humorist” type, and the “silent, good-tempered man” are examples of *cyclothymes*. The “energetic, practical man” forms the extreme of the *cyclothyme* temperament. Of the *schizothymes* he says there are examples in the “polite, sensitive man” and the “world-hostile idealist,” while the extremes are shown by those possessing “cold, masterful natures” and the “emotionally lamed.” He believes that these natures are always correlated with the corresponding physique. It is difficult to know how far this is true. Let us take Mussolini, for instance. He showed the ruthless *schizoid* behaviour, by following the ideal of making Italy the strongest nation in the world regardless of human suffering; but he combined this with the tremendous energy of the *cyclothyme*, and he had the rounded body of the *pyknic*. It would seem that in him there is a combination of *schizothyme* and *cyclothyme* characters.

It is not, however, in the study of ordinary people that Kretschmer's theories are likely to be valuable, but rather in the treatment and prevention of nervous and mental disease. If we know what type of physique tends to accompany certain temperaments, and that those who possess these temperaments have a tendency to special types of mental illness, then we can do much to prevent the development of the diseases in the first place. Take the sensitive *schizoid*, for instance. We know that he is likely to be either athletic or asthenic in bodily shape. By a cursory study of his physique and his temperament we can have a fair idea of what type of mental illness he is likely to develop. He will be a self-absorbed “shut-in” type who will develop delusions and hal-

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lucinations. If we know this we can take precautions, so that some of the harshness of the outer world is shielded from him and, by encouraging him to become as social as possible, we can prevent his introversion becoming dangerous. Perhaps a day will come when the schoolmaster will cease to jeer at the gawky, sharp-nosed adolescent and, by using appropriate gentleness, draw out his schizothyme nature, instead of causing it to become introverted by sarcasm. Perhaps the variations of mood to which the cyclothyme is subject will be understood, and the boy who has occasional fits of depression during which his work deteriorates will be treated with consideration and understanding, for, when he loses his depression, he will have a fresh rush of cyclothymic energy which will allow him to catch up any ground which he may have lost while he was depressed. The wise employer can use his knowledge of psychology in the same way. For example, it is unwise to place a man of schizothymic temperament in a post which needs a great deal of social contact, such as, let us say, a commercial traveller's work—that is the cyclothyme's province, and he will succeed there admirably. On the other hand, a post which needs a cold-blooded application of facts and figures—such as an income-tax collector's—will be just the post for the schizothymic. Perhaps a day will come when those who are destined to become income-tax collectors will have to undergo a physical examination to see whether they possess the appropriate asthenic or athletic physique!

Kretschmer has gone further than the mere description of individuals. He searched to find the basis of his three physical types. He has not been able to prove this with certainty, but he has suggested that there is a certain amount of proof that there is a racial tendency towards different types. For instance, he suggests that the short, corpulent pyknic is found more often in the Latin races (Alpine races) than in other races. According to anthropology, the Latins are short-limbed and inclined to fat; they have a stature of middle height, sallow skin, brown eyes and a meagre beard. This is a fair description of a pyknic. The Nordic race is, according to the anthropologists, tall and slim, with a tendency towards leanness. The limbs are long and the face is long and thin, with a sharp-pointed nose. The hair is fair and the skin is clear. This is a description which might serve the asthenic

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type. The Dinaric race (the race which originates in the Balkans) is said to correspond more or less with the athletic type. The fourth great European race—the Mediterranean—which is supposed to be found most predominant in Spain, is physically “a small, gracefully-built, medium type.” Although this corresponds more to the pyknic than the schizoid types, those which compose this race are said to be more schizoid in character than pyknic. Hence, according to Kretschmer, come the gloom, the religious seriousness and tendency towards outbursts of passion and cruelty which are common in the Spaniard. This must be taken, of course, with great caution. Anthropology is a science which has hardly established itself as being in any way exact, and psychology is in a similar position. There is a certain amount of evidence that the physical characteristics may be altered by the environment. For example, it is possible that the hard conditions in the mountains of Scotland have produced an athletic physique and a schizoid mentality, whereas the more fertile lands of Ireland have produced a more pyknic physique and a cycloid mentality, but from the same material. This criticism is offered tentatively, since none of the facts is certain.

Whatever the truth may be regarding the national or racial tendencies, there is no doubt that in certain families there is a strong predominance of abnormal mentalities whether they be psychopaths or geniuses. The families of Beethoven, Goethe, Byron, Bach, and Michael Angelo all demonstrate this. Now, it is very difficult to know whether these geniuses are produced by inherited or environmental conditions. A psychopathic father will create an environment which may produce nervous or mental disease in the children, as anyone who has had experience in child guidance knows. Kretschmer is inclined to think that genius tends to occur where there is a mixture of two stocks, and that a pure racial inbreeding does not appear to produce it.

He believes that the type of work which a genius performs is regulated by his constitution. For example, the cyclothymes, when literary men, are realists and humorists. When they are scientists they are empiricists who describe what they find and do not bother so much with systems and laws. When they are leaders they are tough and pushful, happy and good organisers.

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When the genius is a schizothyme he is, if a literary man, a romanticist, a writer of great pathos and a formalist. The schizothyme scientist tends to be a logician and maker of systems; he leans towards metaphysics. The schizoid leaders are idealists, despots, fanatics and cold, calculating men.

Kretschmer very ungallantly suggests that no women—or rather normally sexed women—are geniuses or, indeed, that any women produce things of great intellectual value. He believes that when women show evidence of genius it is because they are homosexual. To prove that he quotes a German poetess, Droste, who produced very masculine poems. The other great women in history—Queen Elizabeth of England, the Empress Catherine and Queen Christina of Sweden—all showed elements of homosexuality. Kretschmer says tersely that the great women achieved greatness because they were great men.

All this sounds convincing in a superficial way, but he neglects to examine the psychology of male geniuses from this point of view. In omitting to do so he loses a valuable clue. There is little doubt that a great many geniuses who were men have shown evidence of homosexuality. Michael Angelo and Benvenuto Cellini are said to have been such examples. It would appear probable that the roots of genius grow in abnormal sexuality rather than in masculinity. It is worthwhile here pausing a little and examining homosexuality. Kretschmer implies that it is a glandular matter, and this is the view of those gentlemen who write massive tomes on the disorders of sex. The discoveries of the psychoanalysts have, however, made us change our minds about this, and the opinion is veering round to the point of view that homosexuality is a purely psychological disease, and only related to the glandular disturbances in an indirect way, if at all. The writer has himself treated by psychotherapy a case of homosexuality in a girl, with the successful result that she has fallen in love at least twice with men and has had, indeed, considerable difficulty in controlling her normal sexuality. Similar results have been obtained with men. There is therefore no doubt that homosexuality is mainly a psychical matter.*

To return to our geniuses. We have noticed that cycloid

* The reader who is interested in this matter will find a full account of homosexuality in my "Sexual Perversions and Abnormalities."

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geniuses tended to produce a type of work different from that produced by schizoids.

It is not always easy to be sure by photographs whether a person is physically a cycloid or a schizoid, but it is easy to point out the cycloid and schizoid properties in his work. Kretschmer quotes Goethe as being a typical cycloid both in his physique, which was pyknic, and in the periodicity of his work. His mother was a typical pyknic in physique and a cyclothymic in her temperament. His father was a marked eccentric, and his five brothers and sisters were all of poor physique. Four brothers died in the earliest years, and a younger brother lived to be six, but was "mentally degenerate, slow and abnormally wilful." The only other child, other than Goethe, was his sister Cornelia, who appears to have been a schizoid and at times really insane. She died, after a mental illness characterised by melancholia and delusions, when she was only twenty-seven years old. Kretschmer diagnoses her as "a schizoid and strongly depressed personality with episodic attacks of melancholy."

Goethe's first attack of elation is said to have occurred as a young man of eighteen, when he fell passionately in love with a young girl named Käthe Schönkopf. This was followed by depression with hypochondriacal and religious ideas. The date of this attack of elation was in 1767. During the next seven years Goethe remained on the depressed side of normality. In 1773 he started to get excited again, and wrote his novel "Werther." Seven years later, in 1780, when he had risen to civic honours and was a State official and a privy councillor, he suddenly disappeared and gave himself up to "having a good time." Without a word of warning or leave of absence he rushed off to Italy, where he devoted himself to pleasure and finally married "a working-girl of a none too respectable family." He then returned and settled down again, taking up the threads of his life where he had left them. Goethe had four other attacks of elation, which occurred in multiples of seven. First in 1801-1808—that is, twenty-one years after he had "kicked over the traces" and gone to Italy—then in 1814-1815 and in 1822-1823, and again in 1830-1831. Each of these elated attacks was characterised by a rejuvenescence of his work and by falling in love with a woman. (It may be noted that eroticism is a frequent concomitant of these elated

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periods.) There is one other period which is rather curious. That was in 1794, when Goethe suddenly formed a friendship for Schiller after being cold to him for many years. He fell in love this time with a man, and not a woman. It is worth noting that this was 1794, exactly fourteen years after he had been to Italy.

His life is perhaps the strongest possible example of a cycloid temperament. His children appear to have been rather schizoid, and his family died out. One son became definitely insane, probably because he was a dipsomaniac. The other two appear to have been timid schizoids in their temperament.

Kretschmer quotes the Goethe family as showing the typical process of degeneration which is so frequently associated with genius. It would be necessary, however, not to accept this too avidly. I would point out the possibility of environmental causes for the family disaster. For example, his mother is said to have been cycloid. One might ask, Why is it not possible that Goethe introjected his mother more than his father? That is to say, he formed his character unconsciously on his mother rather than on his father. This would account for the formation of the same type of temperament as his mother and, moreover, his great (homosexual) attachment to Schiller. One cannot believe that Goethe, with his attacks of hypomania, formed an ideal parental environment for his children, and may, by his erratic behaviour, have created surroundings capable of producing insanity in them.

Goethe has been used to demonstrate the cycloid type of genius, partly because he was chosen by Kretschmer as a very fine specimen, and partly because we have no such clear-cut case of an English poet. We have a good example of the schizoid type, however, in Percy Bysshe Shelley. Shelley's poetry has an ethereal and unreal quality which accords well with the schizoid temperament, and it has none of the robust humanity of the cyclic. There is, however, a typical dark thread running through it, and this is apparent in such a drama as "The Cenci." There is none of the episodic variation in Shelley's life such as we find in that of Goethe. Physically he was tall and thin—an asthenic type. From portraits he appears to have the thin nose of the schizoids. Shelley's grandfather was an eccentric man who started to build a castle and then changed his mind and lived on a more modest estate. He left a considerable fortune when he died, and bank-

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notes were scattered in the coverings of his sofa and pushed carelessly in between the leaves of books. He never lived on good terms with his sons and daughters. Shelley's father was more normal, but his mother was very timid. His first education was entirely from feminine sources. When he went to school and was tormented, as all new boys are, he showed a mulishness which is suggestive of the schizoid, and is said to have been solitary, wrapped in vague reveries and apparently lazy. He was not as lazy as he appeared, however, since he read omnivorously—particularly about the supernatural. According to Cabanès, he showed in his early life a certain amount of splitting of his personality, and during these dissociations he appeared to go into a trance or ecstasy. He took a great interest in witchcraft and magic, and had a great capacity for making stories with a supernatural flavour. He delighted in sailing paper boats, which he set on fire. At Eton he was tormented, and responded with wild paroxysms of rage in which he behaved like a wild animal. There he was called "mad Shelley" because of this behaviour. He must also have behaved strangely at home, since on one occasion his father intended to have him sent to a mental hospital, but fortunately a medical friend of Shelley's was able to prevent this being done. When he went to Oxford he developed a typical schizoid passion for reforming the world. He is also said to have shown some more evidence of dissociation by having dreamy trance states and so on. He wrote a pamphlet against religion, and was expelled from Oxford. In 1811 he married Harriet Westbrook and became depressed in 1813. His wife left him and he eloped with the daughter of a friend—Mary Godwin. Meanwhile his wife committed suicide. This suicide is said to have depressed him for a short time, and the death of a premature child by his second wife affected his health also. His tragic death prevents us from ever knowing what would have been the termination of the early signs of mental disease which he displayed. One cannot help wondering what would have been the result of his incipient schizophrenia if he had lived in a less sheltered environment—if he had been a poor man instead of a rich one. He shows, without doubt, all the schizoid characteristics in his poetry. It is detached, inhuman, ethereal and unreal. His passion for reforming the world and his deliberate attacks on the conventions of his environment show the

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difficulty which he had in making contact satisfactorily with the surrounding world.

A very good example of a schizoid artist is shown in the sculptor Gaudier-Brzeska, who was killed in the First World War. He was apparently normal as a youth, but deteriorated later, and became involved with a Polish woman, who lived with him, but apparently only as brother and sister. He seems to have delighted in living in the utmost poverty and filth. The woman he lived with was abnormal, and thought that she was the victim of a plot. In spite of his abnormality he produced a few works of art which show exquisite taste and remarkable workmanship. His "Chanteuse Triste," in the Tate Gallery, is typical of his work.

Kretschmer takes as the typical cyclic scientist the discoverer of the principle of conservation of energy, Robert Mayer. This man went to sea as a ship's doctor at the age of twenty-six. He was much impressed by the fact, which a steersman pointed out to him, that the sea was warmer after a storm than it was before. During the voyage he had an attack of nervous illness in which he was alternately elated and depressed for short periods. When he returned home he settled down and got married. He started writing a treatise—or rather series of treatises—on his discovery. During this period of nine years he had attacks of elation, and even broke up the furniture and tore his clothes to pieces. When his views were published he was unfortunately treated scornfully by the whole scientific world. He was enraged and became depressed. He tried to commit suicide by jumping out of a second-floor window. This was followed by a severely depressed period, during which he developed religious ideas and suffered from feelings of guilt. This lasted about three years, and ended by an elated period. He had other recurrences of his illness, which led to him staying in a mental hospital in 1856, 1865 and 1871. With the advance of years he became more and more famous, and his elated periods became less marked.

We may note that Mayer's depression was closely related to reality—that is, the non-recognition of his discovery—and his elated period showed a similar characteristic, since it followed on the discovery. One cannot help wondering whether the recognition of his views had anything to do with the disappearance of his

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illness—that is to say, that his illness had a much greater psychological than organic basis.

In the discussion of leaders it would have been an excellent thing if we could have utilised Napoleon, but, unfortunately, he was not either a clear-cut pyknic or other type. He suffered from various glandular troubles which put him into the dysplastic types. Lenin would be an interesting study, but he suffered from arteriosclerosis early in life, and this obscures the picture. We are forced to choose the example which Kretschmer gives—Robespierre—as being the leader who shows the most marked deviation from the normal. Robespierre's father is said to have suffered from a prolonged attack of mental illness which was characterised by depression. Robespierre himself showed very marked schizoid traits: he moved with jerky movements like a marionette; he was cold, morose and suspicious. His behaviour was pompous and his speech pedantic. He showed all the detachment from humanity which characterises the schizoid. There is little doubt that it was the tremendous determination of Robespierre which instituted the reign of terror in France. He believed in Rousseau's "Social Contract," and he was determined to make France into a Utopia on the line suggested by Rousseau. Like many schizoids, he adhered strongly to a system, and refused to vary one fraction of an inch either to left or right. He held ruthlessly to his principles, and any who stood in his way lost their heads. Kretschmer says that he treated himself as ruthlessly as he treated others, and that it was his adherence to his beliefs which encompassed his final downfall. Kretschmer describes all this rather graphically; he says, "Robespierre was no man, but a virtuous ghost, a monster walking in sleep and without feeling for the monstrous. There are horrifying situations in history, in which a fully conscious, feeling person would become giddy, and through which indeed a sleepwalker alone can pass. Robespierre dreamt of Rousseau's Arcadian state of humanity, and with that dream vision before his eyes he set himself a path as straight as the path of a bullet, through the swarm of passionately excited humanity, never noticing what went down before him." It is of interest to point out the strange resemblance of this apparently ruthless monster (who was in private life a kind and gentle man) to the poet Shelley. We noticed that Shelley had a passion to reform the world, but he

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did nothing ; Robespierre had the same passion, but he put his theories into practice. Robespierre adhered to a fantastic political system, while Shelley lost himself in ethereal poetry. Shelley was infinitely the more normal, so it seems better that a schizoid should write poetry than dabble in politics.

Kretschmer has tried to find the causal factors of genius. He could, of course, come to no definite plan by which we could be sure of producing a genius, but he thinks that it may be the result of the crossing of previously inbred talented stocks, by the crossing of gifted individuals from different social classes, or by the intermixture of pronounced schizoid and cyclic characters caused by the marriage of cycloid and schizoid.

We now come to the criticism of Kretschmer's views. We have to admit that, as in the case of Jung, we must accept that human beings fall naturally into two classes : whether we call them introverts or extraverts, or schizoids and cycloids, does not matter. We admit also that one can divide the physical types into pyknics, asthenics and athletics. What has not been proved definitely is that the pyknic physique and the cyclic mentality are concomitants, nor that the schizoid temperament accompanies the asthenic or athletic physique. Kretschmer's work had been severely criticised in America, and we must be cautious in accepting it in an uncritical way.

It does seem probable that the physique should influence the mind and vice versa, but, on the other hand, it is possible that the cycloid and the schizoid temperaments are purely mental symptoms caused by the presence of psychological factors. The fact that some-cases of mania and manic depression which are the extremes of the cycloid temperament, and mild cases of schizophrenia which form the extreme of the schizoid temperament, have been treated successfully by psychotherapy, suggests that the bodily factor cannot be so important as one might expect. On the other hand, the rapid response to physical treatments such as electrical convulsive therapy and insulin coma which these illnesses show may imply that physical factors are not unimportant also. Whether Kretschmer is right or wrong, we must honour him for making a courageous attempt to correlate the temperaments with the physique. By his study of genius he has drawn attention to the fact that what we call genius is really only a manifestation of mental

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disease. It will be well if we remember this, and attempt to control genius and to treat it in exactly the same way as we should treat any other manifestations of mental illness. Perhaps we should do well to allow the genius full scope as long as the efforts are beneficial to the human race, but when the "genius" starts to allow his mental symptoms to interfere with human happiness, then it is time to treat him as mentally diseased. It might be better for the world if our Hitlers and Mussolinis were handed over to the psychoanalyst as soon as they showed that their mental symptoms were becoming too extravagant. How much happier the world might be if our financial geniuses could be caught in time before, like, let us say, Kreuger the Match King, their financial schemes (that is to say, their mental symptoms) lead them too far from reality and cause the ruin of thousands.

One cannot help speculating on the effect of Kretschmer's views if they are ultimately proved to be correct. If we can determine from the shape of the body the direction which the temperaments will take—either to cycloid or schizoids ways—it seems possible that it would be immensely valuable in the prevention of mental disease and the production of healthy citizens. Teachers would be able to tell the best way of approaching the children, and employers could tell almost at a glance who would be the right men for the work they had in hand. There is, however, a still wider field. As yet little is known as to the effect of interbreeding schizoids and cycloids. It seems possible that we might benefit the human race considerably if we could find out more about this. For example, there are certain families in which there is a tendency for mental disease to occur. The writer thinks that the environment produced by the mentally diseased parent, has a greater effect on the child than is usually believed, but that is merely by the way. It has been suggested and even practised in certain countries that such stocks should be sterilised. This seems a very crude way of approaching the problem. We know that the cycloids and the schizoids possess valuable qualities. Why should we waste them in this manner? It would be a thousand times more sensible to discover what admixture a schizoid family needs—for example, to make it healthy. Perhaps a dash of cycloid blood will make all the difference. It is worth while pointing out, however, that experiments on these lines should

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be delayed until the theory is proved without any shadow of doubt.

If one were asked to say truthfully what difference Kretschmer's views make to treatment of mental disorders, one would have to admit that they are of little value. If they suggest that mental disease is the result of degeneracy, then they are to be regarded as retrograde and useless. But if they are proved to be correct, they are likely to be of immense value. By their means we cannot hope to make men like gods, but men like men—healthy in body and mind.

CHAPTER NINE

PAVLOV AND THE MACHINERY OF THE MIND

PROFESSOR IVAN PAVLOV was perhaps the most famous experimental physiologist in the world. He shared with our own Professor Sherrington the honour of having added more to the knowledge of the nervous system than any other man. He was born in 1846 in Ryazan in Russia, the eldest son of a poor parish priest. His father was, however, a well-educated man and one who found great pleasure in intellectual pursuits. Scientific ability seems to have been present in Ivan Pavlov and his two younger brothers, since one of them became assistant to Mendéliev, the great Russian chemist. Pavlov was fortunate in that when he was a youth a great wave of enthusiasm for learning swept over Russia during the reign of Alexander II. People used to queue up outside the libraries, and Pavlov waited in these queues for a chance to get the more recent books. In 1870 he gave up the idea of becoming a priest and left his religious school, without completing his studies, to enter the University of St. Petersburg. Here he worked under Elii Tyson and made physiology his major subject. He collaborated with Afanassier in some research regarding the pancreatic nerves. He spent most of his time on the physiology of the nervous system, and neglected medicine, so that he failed in the examination on that subject. In 1875 he was elected to the post of assistant to Tyson. Prof. Tyson was unexpectedly called to Paris, and Pavlov refused to work under his successor because he had endorsed "the transgressions of a man simply because he had an important post and influence, without any regard for the truth." For this fine and typically idealistic Russian conduct Pavlov must have made considerable financial sacrifice.

In 1879 he qualified in the State examination as an approved physician, and was given a research fellowship which was the reward of his previous investigations. It enabled him to work for two years. He was careless of his finances, lived in cramped

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quarters with his brother, and had no interest except in research. In 1880 he met an attractive young teacher, Serafina Karchevokaya, and married her. He had no money, and had to borrow sufficient to defray his honeymoon expenses from his sister-in-law. His wife did everything for him, even to ordering his boots and suits, so that he had more time for his beloved research. In 1888 he discovered the secretory nerves of the pancreas, and the next year he performed his celebrated experiments on sham feeding. Pavlov passed through some difficult financial periods during this research, and he was made Professor of Physiology in 1895, but, because he refused to cringe to the despotic head of the Military Medical Academy, Pashootiv, his Professorship was not confirmed until 1897. He was the only Professor who had the courage to oppose this man, and upbraided his countrymen for servility after his experience here. In 1899 the first surgical department for experimental physiology to be erected in the world was built for Pavlov by the Prince of Oldenburg. In 1904 he was given the Nobel Prize for his work on the digestion. He suffered from a great deal of jealousy and abuse because of his work on the "conditioned reflexes," and was told that "every dog-trainer knew it long ago." His enemies prevented him from becoming President of the Society of Russian Physicians. Even though he was very poor, Pavlov took the greatest care of his animals, and often took to his cramped home, to nurse, a dog upon which he had operated. Far from being the brutal vivisector he was said to be, he felt great pity for all the animals which he used. He achieved a European reputation which grew to be a world-wide one at the beginning of the First World War. During the Russian Revolution he had a very hard time, and it was characteristic of him that he worked on through the whole period, and once admonished a colleague for being late at the laboratory although there was fighting in the streets at the time. He was greatly depressed by the revolution, fearing that economic disruption would interfere with research. The Soviet Government, as soon as it was able, furthered his work, and the Council of the People's Commissars passed a decree requiring the Petrograd Soviet to do their best to assist his research. This was rather fine of the Soviet, since Pavlov had as little hesitation in criticising the new government as he had in attacking the Tsarist régime.

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During the economic difficulties shortly after the revolution, when he could not get electricity or candles with which to light his laboratory, Pavlov used bits of wood as torches, and at times he had to hurry his experiments because the intense cold killed the animals. When the Soviet Government experienced fewer difficulties, Pavlov had every favour lavished upon him, even to special laboratories being built for his use. It was characteristic of his dynamic personality that when he was eighty-six years old he travelled to London to address a Congress of Neurologists and, when he returned to Russia a few days later, addressed a Congress of Physiologists in Petrograd. As a young physiologist, Pavlov performed interesting experiments upon the digestion, and by making a connection between the stomach and the skin surface he was able to watch the digestive processes, their relation to feeding, etc. He then disconnected the œsophagus (gullet) from the stomach, and by sham feeding (that is, giving the animal food by mouth which did not reach the stomach) he was able to collect pure specimens of the gastric juices. These experiments were of great importance, but what is of more interest to us is that he observed a curious fact, which is that the dogs began to secrete their saliva and digestive juices at the sight or smell of food. This is, of course, familiar to all of us as "mouth watering." Pavlov calls this the "psychic stimulus." He noticed that hard, dry foods caused the secretion of copious watery saliva, whereas foods which were of a liquid nature did not do so. Now, previously, such a phenomenon had been dismissed as a manifestation of the mind, and no one had bothered to investigate exactly what was happening. Pavlov was not satisfied with such a summary dismissal of the subject, and he took the usual scientific procedure of explaining what is unknown by what is known. He realised that this psychical secretion must be some form of reflex. The principle of the reflex had never before been used to explain such elaborate behaviour, and to do so was an entirely new departure on Pavlov's part. The reflexes to which physiologists were accustomed were the simple reflexes which are mostly located in the spinal cord. Stimulation of the skin of an animal's foot leads to a nervous stimulus passing up the sensory nerve, through the spinal cord and down a motor nerve, which contracts the muscles to withdraw the limb from danger. Now, it is not a

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conscious act nor is it deliberately purposeful. This is shown by the fact that if we sever the spinal cord above the path of the reflex so that there is no connection with the brain, we can still succeed in producing the reflex just as easily and powerfully (sometimes more powerfully) as when it was connected with the brain. Before Pavlov some psychologists—such as Herbert Spencer—had suggested that the psychical phenomena might be explained by complicated reflexes, but no one had ever set out to investigate the idea seriously—in fact, no method by which this could be done had ever been devised. Pavlov insisted that the salivation of a hungry dog when it is shown food is a purely mechanical matter—exactly the same as pulling its foot away from a hot iron. He started out deliberately to investigate the characters of this reflex, just as though it were a simple spinal cord reflex and not a complex psychical one. He found that the reflex could be diminished by showing the dog food but withholding it from the animal. If one showed it the food enough times, but prevented it getting any, then it ceased to salivate. Looking at the matter anthropomorphically (putting oneself in the place of the dog), one might say that the dog had tired of seeing food which it could not get and refused to think it worth while to bother with the idea of it. Pavlov did not adopt this point of view, however, but insisted that the reflex had been inhibited or stopped in a purely mechanical manner, in exactly the same way as simple spinal reflexes can be.

He next observed that it was not merely the sight or smell of food, but anything attached to the idea of feeding, which caused the dogs to salivate. The rattle of a tin plate used for feeding, or even the appearance of the attendant who usually fed the dog, would be enough to produce the secretion of saliva. This fact can, of course, be observed in ourselves if we are fasting, because we feel hungry or our mouths “water” when we hear the noise of someone laying the table, or even when we approach the house where we know we shall eat. It is important to notice that Pavlov did not get the same reactions with a satiated dog as he got with a fasting one, and he explained this by presuming that the salivary centres in the brain were irritable only when the dog was fasting. He was quick to realise that when the dog responded to the rattle of a tin tray instead of the sight of food it must be that the nature of

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the reflex has changed—it has become more complicated—but he did not forget that it was still a reflex. It was, however, something new, an acquired reflex (or, rather, stimulus), and to this new condition he gave the name “conditioned reflex.” He called the new stimuli “signals.” Pavlov started to investigate these signals and how they could be coupled on to the unconditioned reflexes to produce conditioned ones. It may be mentioned here that all his work was carried out with mathematical precision. By means of a simple painless operation he diverted the duct of the salivary gland so that the saliva flowed exteriorly and could be measured. In every experiment the number of drops of saliva was recorded, so that everything could be assessed quantitatively. He soon discovered that any stimulus, no matter how unrelated it might be to the function, could be used as a signal. In one of his early papers he says, “It follows that any natural phenomena chosen at will may be converted into a conditioned stimulus. This has, in effect, been proved to be true. Any visual stimulus, any desired sound, any odour and the stimulation of any part of the skin, either by mechanical means or by the application of heat or cold, have never failed in our hands to stimulate the salivary glands, although before they were all ineffective for that purpose.” He found that all that it was necessary to do was to stimulate the dog by means of the new stimulus—the signal—and then to feed it, repeat this many times, and the signal would in time become sufficient to make the dog salivate even before the food was produced. It will be realised, of course, that he had happened on the manner by which all learning is acquired.

Pavlov soon discovered that the investigation of these conditioned reflexes was not such an easy matter as one might have expected. He found that it was easy to produce also other unconditioned reflexes which disturbed the experiments. It was found that if one applied a stimulus which was too painful—such as a strong electric current—then the dog would respond to the stimulus by a “defence reflex”—it would snap and bite. It was impossible, therefore, to use a strong electric shock before feeding the dog, since the animal tended to respond in this way to it instead of using it as a signal that it was about to be fed. Another reflex which hindered the work was the “investigatory reflex.” If, in the middle of an experiment, a stranger came into the room,

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it was found that the experiment would fail. The new stimulus provided by the stranger would be strong enough to obscure the stimulus that the animal was about to be fed, and it would cock up its ears or sniff at the newcomer instead of salivating. This investigatory reflex, which is obviously of great value in natural surroundings, was a nuisance to Pavlov, since it necessitated sound-proof conditions and absolute freedom from interruption during the experiments. Actually the dog was kept from the investigator in a separate compartment, so that nothing could disturb it.

Pavlov discovered that if a stimulus preceded the giving of food, the response to this stimulus could be enhanced by the constant repetition of stimulus and feeding until the dog would give its maximum response on every occasion when it was stimulated. He was thus able to build up the conditioned reflex. He now tried to see whether he could destroy it, and found that this too was possible. He gave the dog the stimulus or signal, but he refrained from feeding it. After a time when it had been stimulated again and again, but had not received any food, the reflex died out and appeared extinguished. This is shown in one of his experiments, in which the dog was stimulated by the ticking of a metronome but was not fed.

Time taken for saliva to appear	Secretion of saliva in drops during 30 seconds
3	10
7	7
5	8
4	5
5	7
9	4
13	3

This power to extinguish the reflex by repeating the signal and not reinforcing it by feeding directly afterwards was called by Pavlov "internal inhibition." He used this term in contradistinction to "external inhibition," which he found appeared when some strong external stimulus occurred, such as a cat coming into the room or a loud noise. This external inhibition led at first to amusing complications, since Pavlov's assistants would establish some interesting conditioned reflex and invite him to observe their discovery. When he came to do so, however, the dogs failed to respond and the experiment went wrong. Of

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course, Pavlov himself was providing the stronger stimulus, which prevented the experiment being successful. When this was realised the precaution already mentioned of keeping the dog in a separate compartment was taken, and no more mishaps of this nature occurred.

We can now see that Pavlov has established two types of signals—those which are associated with feeding and those which are associated with not being fed. He found that there was practically no limit to the number of conditioned reflexes which could be produced. It is obviously necessary that this should be so, since if it were otherwise the learning potentialities of the animal would be severely restricted. It is the ability of the animal to acquire conditioned reflexes which allows its adaptation to new conditions, and the remarkable way wild animals adapt themselves to fresh conditions—for instance, in Africa game soon ceased to take notice of trains—shows the great value of the conditioned reflex.

Pavlov now made his experiments more complicated. He started to prolong the interval between the application of the stimulus and the reinforcing of it by meat. By slowly increasing the time between the two it was found possible to increase the interval without destroying their relationship. It will be seen that here we have a third type of inhibition—the production of saliva is withheld until the appropriate time. It shows, moreover, that animals must have some obscure means of determining time. He now discovered an interesting thing. He found that if during the latent period between the signal and the production of saliva one made a loud noise or produced some stimulus which would ordinarily act as a signal for external inhibition, then the dog would start salivating during the latent period. It is as though the dog was ready to salivate, but was holding itself in check (inhibited), and that the external inhibition prevented the internal inhibition. A crude simile might be given by the fact that one's anticipation of lunch disappears when one discovers that the house is on fire.

Pavlov now tried various experiments in which he pitted the inhibitory stimuli against the excitatory stimuli. He found that it was possible to prevent the production of saliva which usually followed a stimulus if one gave another signal which was associated with not feeding and so on.

He was now able to elaborate his experiments in a very interest-

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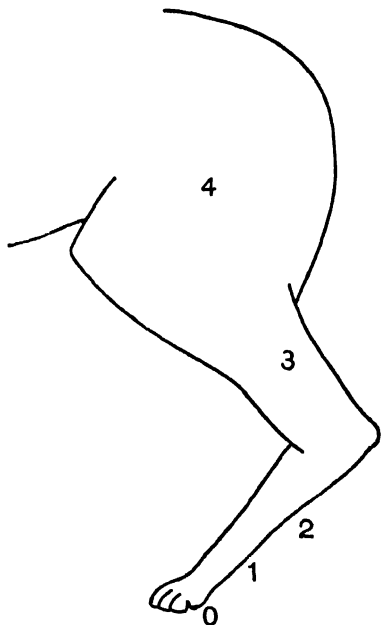
ing way. By taking one stimulus which was excitatory and one which was very similar but which was inhibitory, he was able to determine how much discrimination the dog was able to show. He was able to state confidently that a dog could differentiate between ovals and circles, between different notes and so on. He proved conclusively that a dog would respond to notes which were so high that they are beyond the hearing of a human being. For example, a dog would differentiate between tones only one-eighth different. It could differentiate ovals so close to a circle that the semi-axes were 9 : 8. Dogs were found to be more or less colour-blind, but they could distinguish between shades of grey which appeared to be the same to the human eye. The dog's smell was found to be infinitely more delicate than any other sense, but, owing to the difficulty of measuring smells, we do not know exactly how sensitive it is.

Pavlov now elaborated his signals so that they became exceedingly complex, and with these compound stimuli he was able to make even more complicated experiments. He used a sequence of four notes, A, B, C, D, as an excitatory signal, and a different arrangement, D, C, B, A, as an inhibitory signal. Now, four notes can be arranged in twenty-four different ways, but the dog learned to differentiate these two signals from the rest—really a marvellous piece of discrimination.

So far we have examined what may be described as the fundamental properties of excitation and inhibition, and the manner in which stimuli could be used as excitants or inhibitants. We can now see how Pavlov studied these processes and the way in which they behave. He soon discovered that the inhibition and excitation were not stationary or static processes, but that the cortex of the brain was subjected to waves of excitation or inhibition which sweep over it and then subside. He proved this by ingenious experiments. For example, a point *o* on the paw of the dog was made a negative point by stimulating it and never feeding the dog afterwards. Other points 3, 9, 15 and 22 cms. away from it were made positive points by feeding the animal after stimulation (called points 1, 2, 3, 4). Now it was discovered that stimulation of any of the points 1, 2, 3, 4 would each produce five drops of saliva. After point *o* (the negative point) had been stimulated points 1, 2, 3, 4 were stimulated separately. It was found that

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point 1 gave practically no saliva, point 2 gave half its usual amount, whereas points 3 and 4, which were comparatively distant, gave the usual amount. It is easy to imagine what has happened. One must imagine a point corresponding to point 0 on the cortex of the brain. When the foot is stimulated the corresponding point on the brain becomes a centre of negative (inhibitory) activity. The increase in energy at this point Pavlov called "concentration." The spreading wave of energy which emerged from the point of



concentration was called "irradiation." It is easiest to imagine the process as resembling the disturbance which occurs when a stone is thrown into a pond. As might be expected, the activity dies away most rapidly at the points farthest away from the centre of concentration and last at this centre. A wave of excitation was found to pass out across the brain so rapidly that Pavlov was not able to devise experiments to demonstrate its rapidity, but it is possible to show that the disturbance persists for several minutes at the point of concentration. It was found that if any other point near point 0 was stimulated, that point took on inhibitory qualities which diminished the farther one went from point 0 and

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the longer interval of time one allowed before one applied stimulation.

A most interesting fact was discovered in these experiments, and this was that points on one side of the brain corresponded exactly with points on the other side, and that if one took a point (say o') on the opposite paw to point o, but in exactly the same position on the paw, then one could use the new point just as one used the old one. Similarly, of course, conditioned reflexes started by a point on one side could be induced by a similar point on the opposite side.

This duplication of sides is most interesting, and becomes important in cases where there is damage to the brain. Pavlov next discovered the interesting fact that the wave of inhibition (which is set up, for example, as we saw in the point o' when the point o on the dog's paw is stimulated) is not confined to that portion of the brain which is related to the sensation of the part concerned. On the contrary, it spreads all over the whole cortex of the brain, and, although the inhibition starts in the tactile areas, it will invade those parts of the brain which are concerned with the aural and visual functions. This was easily proved by setting up an inhibitory conditioned reflex in one sense and an excitatory conditioned reflex in another sense. Thus, for instance, a visual stimulus which is inhibitory can affect an auditory stimulus which is excitatory, and cause it to produce less than its usual effect. Naturally various factors influence the strength of the wave and its effect on other parts of the brain.

From these experiments Pavlov concluded that the brain, or rather the cortex of the brain, acts as an analyser for the various sensations which are received, and he speaks of the tactile analyser, the visual analyser and so on. This is interesting, since it coincides very exactly with the work of Head and others on the function of the human cortex and the effect of injury upon it. It is believed that sensations become "conscious" in the lower part of the brain, in the thalamus, and are assessed and interpreted in the higher parts of the brain—the cortex.

Pavlov revealed that a phenomenon (which was discovered by Sherrington in the spinal cord) could also be demonstrated in the brain. This is called "induction." He found that when the wave of inhibition (which occurs when a negative conditioned reflex

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has been produced) passes away, then if one produces a positive conditioned reflex it will be found to have its effect considerably enhanced. This effect is called positive induction. He found that the opposite effect also occurs. After the wave of excitation passes away (following the production of a positive conditioned reflex) the effect of a negative conditioned reflex is much stronger than it would otherwise be.

Pavlov suggested that the brain is composed of a mosaic of functions, and that it acts as an extremely complicated switchboard which has plenty of room for fresh connections. This is in perfect accord with the investigation of the effect of crude electrical stimulation of the brain which shows that various parts of the cortex have different functions. Pavlov's studies revealed the curious fact that, with the repetition of a positive conditioned reflex a number of times, it tended to assume inhibitory properties, and this was not due to the gradual satiation of the dog, since any other positive conditioned reflex which was applied when the first reflex started to diminish would produce the full result. After a time, if a dog has his conditioned reflexes utilised again and again, it is found that he tends to act as though it were inhibited. He becomes inert and declines his food after the application of the conditioned stimulus. The curious fact was discovered, however, that it is easy to develop conditioned reflexes to fresh stimuli, and that these develop very rapidly. The dog will now react normally, and the fresh reflexes will not have the inhibitory effect of the old ones. It is also true that, if one exhausts one analyser so that it no longer responds to conditioned reflexes, then that analyser acts as a centre from which inhibition radiates, and it is capable of inhibiting analysers which are in the neighbourhood, or even of making its effect felt throughout the whole cortex.

Now, Pavlov suggested that this inhibition is a "localised sleep," and that the part of the cortex which is affected is in a similar state to the whole cortex when one is asleep. Thus there is the curious fact that sleep and internal inhibition are one and the same thing. There is a similarity in their causation—that is, by an exhaustion of the cortical elements through a repetition of stimuli. Moreover, when Pavlov and his collaborators attempt to extinguish positive conditioned reflexes by not reinforcing them (*i.e.* by feeding), then it was frequently found that the animals became

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drowsy and even fell asleep on their stands. An example is as follows. An animal is conditioned to a musical tone by feeding after the tone is sounded. A tone close to the conditioned tone is now sounded and the animal is not fed. It has to differentiate the first from the second. This means that it has to apply a strong inhibition to the second tone and not to respond to it at all—at least, except in a negative way. It is found that the dog gets more and more drowsy, until it eventually falls into a deep sleep with a complete relaxation of its skeletal muscles and hangs snoring in the slings which support it. The inhibition has spread from the auditory areas and invaded the whole cortex of the brain—the animal sleeps.

A similar thing was found when the conditioned stimulus was produced, and then, by reinforcing it (by feeding) at longer and longer intervals, long-delayed reflexes were established, and it was found that if the delay was longer than three minutes then the animal frequently became drowsy and even fell asleep. It will be seen that the dog has had to inhibit its salivary response for the long-delayed period, and consequently the inhibition has had to be very strong. In consequence of this, it has spread and invaded the whole cortex, with sleep as the result. Naturally sleep occurs more rapidly in such a state than it does in the slowly developing internal inhibition which results from the slow exhaustion of the cortex by the frequent repetition of positive conditioned reflexes throughout months or years. It is remarkable to notice that even when the stimulus is a painful one—such as a strong electrical shock—if it is used as an inhibitory stimulus, then it will induce sleep. The stimuli which are most conducive to sleep are thermal ones (*e.g.* heat), and those which are least conducive are auditory ones. That this is applicable to human beings is obvious, since people tend to sleep when exposed to extreme cold or heat, whereas the difficulty of sleeping where there is a great deal of noise (particularly if it occurs irregularly) is shown by the people who write to the papers complaining that the hooting of motors, etc., interferes with their sleep and should not be allowed.

Pavlov discovered that if one applied a strong stimulus to an animal while it was in an inhibited state—such as one finds occurs during a long-delayed reflex—then the internal inhibition is itself

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inhibited by the investigatory reflex which occurs. The stimulus which has caused the investigatory reflex, on repetition, acquires inhibitory properties, and when it accompanies the inhibitory period of the delayed reflex the result is that the animal tends to fall asleep. He found that although excitation travels very rapidly over the cortex, inhibition does so at a very slow rate and is measurable by minutes. He points out that sleep itself is not an instantaneous process and takes some time to invade the cortex. Pavlov also found that often before an animal fell asleep under the influence of inhibitory stimuli it showed a considerable amount of excitement, scratched itself, wriggled about, and so on. He believes that this is due to the process of induction which we have already studied. He compares this temporary restlessness with the state of general excitation which some children show before they go to sleep, and, less legitimately (to the writer's mind), to the state of excitement which is often found to precede anæsthesia. The latter is not such a good example, since the cortex of the brain is undergoing intoxication at this time.

Another manifestation of inhibition was discovered by him, and is of great importance to the psychologist. He discovered that a small number of animals did not fall asleep with a relaxation of the skeletal musculature—sagging limbs, drooping eyelids, slack jaw, and so on—but that this type of dog stood in an apparently alert posture with its eyes wide open, but immovable. Its head was held up and it remained motionless on its legs sometimes for a period of hours. When one changed the position of a paw, the limb remained in the new position. The dog did not respond to the presentation of food. Pavlov believed that dogs which manifest this position are suffering from a condition of catalepsy, and that this condition is caused by the inhibition being limited to the cortex of the brain, and not spreading to the lower centres which control posture. It is obvious that the condition described bears some relation to hypnotic trances, and to the form of insanity called catatonia, in which occur such trances combined with a passivity which allows the limbs to be placed anywhere and to stay in that position. The application of a frightening stimulus appears to have a similar inhibitory effect.

He recorded the following experiment: "A dog which served for experiments with conditioned alimentary reflexes and

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which had never showed any dissociation of the secretory and motor components of the reflex, nor any signs of sleep while in the stand, was placed for the very first time in front of a large audience for the purpose of a demonstration. The unfamiliarity of its surroundings had a big effect on the animal; it shivered slightly, and became as though spellbound. On administration of the conditioned stimulus the normal secretory effect was obtained, but the dog did not take the food, and in a relatively short time fell into a profound sleep in its stand, right in front of the audience, with complete relaxation of the skeletal muscles. Evidently in this case the powerful, unusual and protracted extraneous stimulus produced, at first, a partial inhibition affecting only the motor area of the cortex; then the inhibition spread over the whole cortex and descended to the lower parts of the brain. The experiment on the whole is similar to those in which so-called animal hypnosis is usually demonstrated. For example, a rapid immobilisation of an animal held on its back leads to an inhibition which spreads to a varying degree in different animals."

Pavlov discovered that there are two different types of temperament in dogs (actually he was elaborating his theories about this when he died). He discovered that some animals which were vivacious and lively were always investigating, and reacting to, the slightest stimulus. The second type of temperament in dogs he found was a timorous one. These dogs were shy, slinking and afraid. They treated everyone as though he was dangerous and an enemy. Strange as it might seem, Pavlov found that the excitable, vivacious type easily fell asleep when placed on the stand, while the shy type did not do so as easily. He believed that the first type of dog fell asleep because it rapidly used up its psychical energy unless it was subjected to a continuous and varied stimulation. The shy type of dog tended to limit its excitation to one area and, moreover, did not allow its inhibition to spread all over the cortex, with the resulting production of sleep. Rarer types of dogs also occurred, and he described a type which showed very little excitement under ordinary conditions, but which attempted to attack him when he deliberately upset its calm with a frightful animal mask and made noises on a tin trumpet! Another type of dog was noticed by him and falls, so he said, into the "choleric" classification of the ancients. It appears, however,

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to correspond more or less with vivacious animals described above.

Pavlov succeeded in producing a curious pathological condition in a number of dogs by a very interesting experiment. He produced a conditioned reflex in them by means of the application of an electric current. The dog was given a very slight electric shock, and then fed until the reflex was established. The strength of the current was slowly increased until it was very strong—such a current as would ordinarily (without the preliminary training) produce a strong defence reaction. It was discovered that when the current reached a certain strength it passed the limit of tolerance, and produced an explosive defence reaction. The dog barked and snapped, and so on. This was not a temporary condition, since the application of the weakest electrical current now caused the same reaction. The only way Pavlov was able to treat the dogs was by complete rest, and one dog recovered, so that the conditioned reflex could be established, after a rest of three months, but other dogs needed a much longer period to return to normal. This production of the defence reaction must be the first occasion on which it has been found possible to produce a “functional” nervous illness in a dog under experimental conditions.

Pavlov and his collaborators now developed a still more interesting experiment. A dog was conditioned to the stimulus of a luminous circle shone on a screen in front of it, and by reinforcing this stimulus by feeding, a conditioned reflex was produced. It was shown an ellipse which was of the same luminosity and surface area, but this stimulus was never reinforced so that it acquired inhibitory properties. The ellipse was now slowly made more and more circular, until the ratio of the semi-axes was 9 : 8. The dog succeeded in differentiating these two shapes to a certain extent, but instead of improving, it deteriorated with practice, and its behaviour underwent a sudden change. It became restless, squealed and wriggled about in its stand. When it was taken to the experimental room it barked loudly. This behaviour was entirely contrary to its previous conduct. It was obviously ill and suffering from a neurosis. Pavlov now experimented with the various types of dogs. Choosing a dog of the inhibited type and a dog of the excitable type he conditioned them to six different

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conditioned stimuli. He now prolonged the interval between the application of the stimulus and the feeding which invariably followed. By varying the different stimuli he succeeded in overcoming the tendency for the animal to fall asleep, which we noted previously occurred when this interval between the stimulus and the feeding was prolonged too much. The interval was prolonged by five seconds daily until the period of three minutes was reached. The two dogs treated the problem differently. The dog with the predominant leaning towards inhibition succeeded with no trouble, but the dog which tended towards excitation suddenly behaved, as Pavlov said, as though it had gone mad. "The animal became quite crazy, unceasingly and violently moving all parts of its body, howling, barking and squealing intolerably." He pointed out that the dog was trying to solve the problem of controlling the excitation and inhibition at the same time. Moreover, since the stimuli affected different senses, and so different parts of the brain, there were six different points where the warring inhibition-excitation process was occurring.

Pavlov discovered that it was almost impossible to produce a neurosis in the inhibited dog by a method like the one just described, but that a neurosis was easily produced by increasing the strength of the stimulus, as in the experiment with the electric current which was described above. He pointed out that the problem with which the inhibited dog had to deal was one of controlling the excitatory process, whereas the excitable dog had difficulty in controlling its inhibitory function. He found that he was able to cure the excitable dog by giving it bromides, which stabilise the internal inhibition. The inhibited type of dog responded only to a period of rest, since bromides did not affect it at all. He stated that there are three types of stimuli which tend to produce inhibition: monotonously recurring weak stimuli, very strong stimuli and very unusual stimuli. (This is obviously so in human beings, since one soon ceases to hear the traffic noises in a busy city, a very loud noise tends to "paralyse" one and one stands "stock still" at something which is very unusual.) Through an unavoidable accident, Pavlov was able to study the effect of unusual and frightening stimuli on the dogs. In 1924 in Petrograd there occurred a severe flood which submerged the kennels. The dogs had to be swum to the laboratory, which was

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about a quarter of a mile away. During their transference there raged a terrible storm with thunder and lightning, falling trees, splashing waves, and so on. The dogs were placed on the ground floor of the laboratory, all huddled together. Pavlov noticed that they did not fight and quarrel, as they usually did when they were mixed together. He thought that there was a considerable inhibition to allow this. After the flood it was found that the experience had interfered with the reflexes, and with one dog it was impossible to get any reflexes except when the experimenter was in the room. The weakest stimuli were used successfully, but when a strong stimulus was tried the reflexes again disappeared. By patient experimentation he succeeded in re-establishing all the reflexes to normal in two months' time. *He now tried what the effect would be if he allowed a trickle of water to flow under the door of the room in which the dog was situated.* He did so, and the dog jumped up quickly, looked round and breathed heavily. It tried to get off the stand. The application of the conditioned stimuli produced no effect whatsoever.

Pavlov carried out further experiments upon the function of the cortex of the brain by means of surgical interference. It will be realised that this is a very crude method and liable to produce conflicting results. He found, as many other experimenters have done, that operations on the brain were negated by the great tendency of the animal to have epileptic fits afterwards. This is because the incision sometimes heals by a hard, penetrating scar which acts as a point of excitation, and from whence a wave of excitation spreads over the cortex and produces the familiar effect of a fit. He found that he was able to predict the onset of a fit by the behaviour of the conditioned reflexes and said, "If, suddenly, without any obvious cause, the conditioned reflexes diminish in strength and then disappear, it is an infallible sign of an approach of an attack of convulsions."

Pavlov found that the complete extirpation of the cortex of the brain led to a total disappearance of the conditioned reflexes. It was, moreover, impossible to produce any new ones, however long or patiently the attempt was made. It is obvious, therefore, that the conditioned reflex is a function of the cortex, and that other parts of the body are unable to vicariate this function. Similarly, he found that if the temporal lobes (which are concerned with the

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analysis of sounds) were extirpated, then the dog could hear, but was unable to understand the meaning of sounds. For example, it would respond to a loud noise, but would not answer to its name. Extirpation of this part of the brain did not *abolish* auditory conditioned reflexes, however, but whereas the dogs would respond to a complicated arrangement of musical tones before the extirpation, they would only respond to single tones afterwards. Thus other parts of the brain were able to undertake a certain amount of the function of the "auditory" part of the brain, but this vicariation was only partial, and the remaining brain could not be educated to fulfil the whole function of the extirpated portion.

Many of Pavlov's experiments upon the function of the "visual" parts of the cortex correspond very exactly with what has been discovered in men in whom there has been damage to the occipital cortex. He found that partial extirpation produced blindness over various parts of the visual field, and that total extirpation produced complete blindness except for variations in the intensity of light. This function, he discovered, was not present in the occipital (or hind) portion of the brain, but in the frontal (or fore) part of the cortex.

Pavlov found that when both the visual and the auditory portions of the brain had been extirpated, the dogs tended to sleep most of their time, and became very indifferent to the presence of men or other dogs. He believed that this was due to the fact that they received no stimuli from a distance. They located their food mainly by means of smell and touch, and in consequence they took no interest (in fact, they could not do so) in distant objects. Dogs which had the front part of the brain removed showed exaggerated motor reactions—struggling, barking and biting at the least provocation, lapping milk, but only if it was brought into direct contact with the mouth. They showed no sexual reflexes. Other physiologists, such as Sherrington and Goltz, have suggested that it is the frontal lobes which control the more "volitional" movements, and Pavlov's work confirms this. He says that the animal is "transformed into a much simplified and inadequate reflex machine" after extirpation of the frontal lobes of the brain.

He favoured the view which was put forward first of all by

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our English philosopher, Herbert Spencer, that the instincts are nothing but complicated reflexes. He pointed out that the long chain of incidents which form an instinct, such as we find in the nest-building of birds and the sexual behaviour of some animals, does not negative them as being reflex in their nature, nor again does the temporal variation, such as occurs with mating, form any differentiation, since many reflexes show variation in a similar manner. The fact that most reflexes are local, whereas instincts influence the whole organism, will not be of value as a distinction, since walking, standing and balancing control the whole organism, yet they are reflexes. It is of great interest to the clinical psychologist that Pavlov discovered that the most common cause of neurosis in dogs was a conflict between inhibition and excitation. The medical psychologist encounters conflicts at every turn, and even without the work of Pavlov might have guessed that if some method could be devised to produce conflict in animals, then a neurosis would result. Pavlov's work in this matter is a magnificent confirmation of Freud's findings.

Again, it is common in analytical psychotherapy to find that a situation which repeats some previous experience, which was very fearful or which was associated with a great deal of emotion, will, when it occurs, produce the same emotion. Pavlov's experiment with the effect of water upon the dog which had been frightened by the flood again confirms what has been discovered with human beings.

It is easy to find a parallel to the states of excitation and inhibition which Pavlov was able to produce in dogs. The excitement which occurs in states of insanity such as mania or catatonic excitement is somewhat comparable, and the stupors, whether catatonic or melancholic, could be regarded as states of inhibition. We must be careful, however, not to be too enthusiastic in our comparisons, since it is not really permissible to compare the phenomena which appear in dogs with those which occur in human beings, and in some states of stupor, for instance, we may find that in what seems to be an inhibited state there is really intense psychical activity. Pavlov himself felt that this is true, for he said: "Though our research abounds in cases of pathological disturbances which are comparable to those observed in man, I do not feel either safe or justified in proceeding in my

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comparison beyond the above observations, and these should not be taken as in any sense explaining the incalculably complex symptoms observed in man, but only as showing that a comparison of a general nature can even now be made." Nevertheless, it does seem permissible to compare the states of inhibition which Pavlov was able to produce in his dogs with the cataleptic state which can be induced to hypnosis. He suggested that words can act as conditioned stimuli, and this appears to be true.

Pavlov's work does tend to throw a great deal of light on that of Freud, and their theories are not really mutually incompatible. Pavlov has described the production of neurosis by the conflict of inhibition and excitation; Freud describes neurosis in human beings as being caused by the repression (or inhibition) of emotion (which we may look upon as merely a form of excitation). Pavlov believed that inhibition can be localised (and indeed has proved it), and so upheld the possibility of repression of a solitary memory which is charged with emotion.

It is possible to understand how analysis works if we realise that every word is in reality nothing but an elaboration of the vocalisation which should accompany stimulation. When a dog is subjected to a strong stimulus it responds by barking or snarling, and it seems probable to the writer that this vocalisation is strongly associated with the appropriate emotion (excitation) which usually accompanies it. Through the complexity of his mental functions, man has succeeded in elaborating his vocalisations into sentences, and when he represses an emotion, he inhibits the motor processes of speech which are connected with the repressed emotion. By analysis it is possible slowly to break down the inhibition, and so allow the emotion (or excitation) to escape. This, of course, confirms the findings of analysts that the more emotion the patient is able to rid himself of during the treatment, the more likely is he to become cured. I think that if it had been possible that Pavlov could have devised some way by which his dogs could have been freed from the conflicting inhibition-excitation, as a human can be by speaking, then they could have been freed from their neurosis. What a pity it is that man is the only animal which has the power of describing his thoughts!

When we come to examine Pavlov's work we are struck by two things. Firstly, his discoveries and his systems are, like psycho-

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analysis, the work of practically one man. He had, of course, many collaborators, and many of the experiments described above under his name were really carried out by his assistants, but it was he himself who was the real directing force and collator of the experiments. It was his great mind which unravelled the meaning of the problems which his work had presented.) Secondly, Pavlov's work was, even more than Freud's, a new departure. It was a new growth and, like the branches which have sprung from the tree of psychoanalysis, in time we may expect to find that branches will grow in all directions from it. In fact, one has already done so in the school of "behaviourism" elaborated by J. B. Watson in America. Watson has done a considerable amount of work on children, and has shown that it is quite possible to condition very young infants to stimuli much in the same way that it can be done with dogs. For example, a woolly rabbit was shown to a young infant, who responded by stretching out its hands to take it. A loud noise was then made behind the child, which responded by a fear reaction—it whimpered and cried. This was repeated a number of times, when it was discovered that the mere showing of the woollen toy to the child was sufficient to evoke the reaction of fear. The child had associated the toy with the noise, and responded appropriately. It had been "conditioned" just as a dog can be conditioned. It is obvious that the whole of learning must correspond to the conditioning of dogs—or, if not the whole learning, at least that type of learning by which we manage to live satisfactorily in a mechanical era. For example, when one learns to drive a motor-car one is really acquiring a series of conditioned reflexes, and when a pedestrian responds to a motor horn, he is responding because he is conditioned to react to this noise as a stimulus which implies danger. Some people seem to take a considerable time to become conditioned to a new stimulus, as is evidenced by the fact that a new fashion is usually disliked until it becomes familiar.

To return to the evaluation of Pavlov's work, it must be admitted that he has not given us any new method of treatment. We must not expect that his work, which is still in its infancy, can do so yet. We cannot help agreeing that his studies are even more fundamental than Freud's, and that eventually they may lead to something of great value. If only they lead to a shortening of the long period

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necessary for treatment by analysis it will be a wonderful step forward. Even if they do not do so, his researches will be of incalculable value because of their confirmatory value. Pavlov's courage and determination, which carried him so bravely through floods and revolutions, as well as his incalculable skill as a physiologist and his originality as a thinker, will write him down in history as one of the immortals.

CHAPTER TEN

WAGNER-JAUREGG AND HIS FOLLOWERS

WAGNER-JAUREGG was professor of psychiatry at Vienna University, and when he published his treatment of syphilis of the brain (so-called general paralysis of the insane) in 1917, perhaps without complete realisation of what he was doing, he opened a new door to the exploration and treatment of mental disease.

Throughout the ages many other physicians had noticed that mental illnesses had suddenly and inexplicably been cured when some intercurrent, unrelated fever appeared. Medical literature contained odd cases which had been recorded here and there by isolated observers. Whilst still a young man Wagner-Jauregg collected these single cases and published them in a small book. No one took the slightest notice of his work, and he applied himself to other researches until he rose to a chair of psychiatry. Then, by now an ageing man, he decided to continue his earlier studies, and went to the University library to consult his little book. Alas! no one, no single person, had had the curiosity to look at it. The pages were still uncut and the cover unsoiled; the treasures within had remained buried.

Whether one is a monist and believes that the mind is a manifestation of the brain, or a dualist who thinks that it is something separate—a soul, spirit or ghost—or whether one believes that mental phenomena are something which appears parallel to physical existence, there is no doubt that the mind is affected by the vicissitudes of the body. Thus an anæsthetic extinguishes consciousness like a light; a blow on the head produces concussion with loss of memory which sometimes stretches to a time *before* the incident; again, poisons, whether administered by mouth or produced by illness such as pneumonia, may cause delirium and so on. Conversely, the mind can react on the body—a thing so often forgotten by those who take a purely materialistic point of view—and sorrow, for instance, produces secretion from the

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lachrymal glands and so weeping; fear results in diarrhœa; hatred may cause loss of weight; prolonged anxiety induces disease of the thyroid gland and so on.

It was not altogether this which Wagner-Jauregg discovered. He could not do so because it was already known, although so frequently forgotten, throughout medical history. What he did was to find that fever could kill the germs of syphilis—the spirochæte—lodged in the brain.

Even this was not altogether new. It was known that fever could kill germs elsewhere. For example, some forms of cancer were treated by the injection of toxins produced by streptococci which caused a temperature, but such remedies were usually regarded as a last resort, and not applied systematically. It was the careful, exact and painstaking examination of the problem with regard to syphilis of the brain which gave the great discovery—its amelioration and sometimes cure.

When Wagner-Jauregg was first introduced to this disease it was considered incurable. Truthfully speaking, there are two kinds of cerebral syphilis: that involving the blood-vessels and that involving the brain-tissue. The disease of the vessels might be cured by the appropriate treatment, but once the germ—the spirochæte—involved the actual brain-tissue there was apparently no hope.

Let us, for one moment, examine the picture of this illness before his discovery. It was indeed a tragic one. The patient was perhaps a successful man (a sad example was Guy de Maupassant), who may have appeared healthy for years. Then he was noticed by his friends to be duller than formerly, his memory seemed to be deteriorated and his intellect impaired. The falling away of his mind was perhaps disregarded, but sometimes an epileptic fit would draw attention to his illness. If this was brushed aside as a mere fainting attack the slow advance of his mental deterioration would finally force notice to be taken of his condition. Grave aberrations of conduct might appear; the formerly meticulous person became slovenly in his dress, vulgar and outrageous in his manners, perhaps drinking to excess and frequenting the company of prostitutes (Maupassant shows something of this in his later days). With the progress of the disease fits became more common, and the sufferer found it more and more difficult to do his work,

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became more easily fatigued and reluctant to exert himself. Emotional changes appeared, and he showed violent attacks of temper, or remained in a state of irritation which needed only the slightest accident to precipitate a violent fury. Some patients, on the contrary, became apathetic and so dull and disinterested that they allowed their business to fail without concern. Some formed senseless attachments to unworthy persons, and spent money wildly without regard to their responsibilities or to the future. Others were egotistical and tended to be arrogant and exalted in behaviour.

Usually the disease progressed into simple dementia, so that the patient sank, sometimes with evidence of anxiety but no real insight, into an almost vegetative state. On the other hand more striking manifestations often occurred. The patient developed a more or less exalted state of mind. Daily he became more self-important and grandiose. Delusions appeared, and were characterised by a slow crescendo of personal importance. At first he was a mere director of his place of work, then Member of Parliament, Prime Minister, and finally something fantastic, such as Dictator of Dictators (as one patient told the writer was his designation). This developed naturally into being God Himself. Often he thought that he was worth countless millions, and would give away "cheques" (perhaps written on copybook, or even lavatory, paper). His promises were so lavish—so generous and extravagant—as to create suspicion, although young and guileless nurses have been known to credit them and believe that they have met the beneficent millionaire at last.

Although the mental state progressed through excitement, sometimes with wild hallucinations, insomnia and mania, it always ended in dull dementia, usually with obesity and gross physical changes. The patient became so demented that he was unable to care for himself. Finally paralysis with tremors, inco-ordination and ataxia set in. He took to his bed, where, after lingering a while, he died of some disease such as pneumonia.

This was the picture which Wagner-Jauregg must have seen when, as a young man, he first walked through the wards of a mental hospital. There would be not one case, but a hundred or two cases, slowly sinking into oblivion. The same sight was to be seen in every hospital which treated mental disease all over the world.

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The first thing which he did was to collect the isolated records of spontaneous recovery following infections, fevers and inter-current illnesses. The temperature caused by them was supposed to favour cure. It was this collection of recorded cases which formed his first, unread, book.

When, many years later, as professor, he returned to the problem, he sought for some controllable fever to apply, and selected malaria. Malarial fever is caused by a protozoa which is conveyed from one person to another by the anopheles mosquito. It consists of various varieties, but Wagner-Jauregg chose the benign tertian type because it gave a recurrent spike of temperature every three days. Moreover, it was easily terminated by quinine.

We do not know what he felt when he injected his first patient with malaria. He could not have felt the qualms of a Jenner, who inoculated a small boy with cow-pox, but rather the curiosity that Pasteur experienced when he treated his patients infected with hydrophobia. Just as in rabies there was no hope of recovery, so in general paralysis the final result was already known. The man, at the pinnacle of his mental and physical health, would be struck down, become demented, paralysed, covered with bed-sores and living, although mentally dead.

The results which followed the malarial treatment were infinitely better than Wagner-Jauregg anticipated. Some patients, of course, with such a severe disease, died, and some recovered only to relapse. It needed experience to judge the physique able to withstand such fever and to know how many peaks of temperature to give. All this came with time, and the treatment rapidly gained favour. Malarial treatment of general paralysis is usually given in a mental hospital, but this is not essential. It is probably given more successfully by a team of physicians and nurses who specialise in this work rather than by the psychiatrist who makes it only a part of his interest, and so hospitalisation is an advantage.

The actual technique is simple ; the patient is infected by the use of a mosquito which is contained in a gauze-covered jar, or, if it is preferred, a few cubic centimetres of blood from a malaria-infected patient may be injected directly into the sufferer's muscles. Those between the shoulders are most suitable. The incubation period is about a fortnight, and it is usual to take the patient's temperature for a week after the infection starts.

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When the attacks of fever occur the patient has his temperature taken half-hourly, and a careful record is kept of its height and duration. Blood films are also taken, so that the number of parasites in the blood can be determined, since too many show he is resisting the fever badly. When he has had about twelve peaks of temperature the malaria is terminated either by quinine or thiobismol and the treatment stops.

Since this treatment is exhausting, naturally only those likely to withstand its stresses are chosen for it. Thus it becomes extremely important that cases are discovered early, when the patients are able to receive it with safety.

The surprising thing about malarial treatment is that after it the patient is always discovered to be less demented than he appeared, perhaps because when the disease is in full flight he is confused by the poisons of the spirochætes, but he always needs some time to become rehabilitated before he is able to resume his normal life.

Malaria is not the only way of treating this dreadful disease. Any means of producing a temperature will do. In America experiments have been made with electrical means—such as diathermy or short-wave appliances. These are expensive, and have shown no marked advantages over the cheap and convenient mosquito.

It is difficult to praise enough a treatment such as Wagner-Jauregg discovered. The natural death-rate from syphilitic infection of the brain—general paralysis of the insane—was virtually 100 per cent. The death-rate from malarial treatment varies from 2 per cent. to 12 per cent., depending on the patient's health and the skill of the physician and nurses attending him. In experienced hands the percentage of patients who are sufficiently improved to return to life outside a mental hospital is between 20 and 30 per cent. Three-quarters of those who leave the mental hospital can resume their previous work and remain well ten years after discharge. Wagner-Jauregg not only saved men from the ultimate result of their early follies, but also rescued them from the horrors of dementia. Incidentally he abolished the popular belief that syphilitic patients in mental hospitals are "smothered by pillows"! They never were, or the Board of Control would have been interested, but they are now given the

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much more beneficial malarial treatment and resume their lives as respected citizens in the outside world.

The brilliant results achieved by Wagner-Jauregg in the organic sphere are somewhat comparable to the work of Freud in the psychological one. Although, to be fair, one must admit that he did not explain the actual mechanisms involved in his cures, nevertheless, he focused attention on the actual possibility of successful treatment by physical means, and in all parts of the world research workers concentrated on discovering similar treatments. We cannot, of course, give him credit for those which have been discovered by others, but he should be praised for drawing attention to new roads of approach.

Before we pass on to those freshly discovered treatments it might be interesting to tell a little story of Wagner-Jauregg himself. The writer was friendly with a charming old gentleman in Vienna named General Baron Odelga, who had commanded an Army Corps in the First World War. This old gentleman had a flat opposite to Wagner-Jauregg's, and from it one could see the professor's bathroom window. Every morning the great man shaved at the same time, and so regular and exact was he that if my friend was late his wife would call out. "Hurry up, you are late this morning. The Herr Professor is shaving already!" No doubt it was the same regularity applied to his work which gave him his success in research.

We intend to discuss the different treatments which have been based on physical and organic factors, but not all of them have been discovered by any special person. Many have evolved, and in any case it is often impossible to give the credit to one specific individual. This need not be a disappointment, since it is commonly so through all branches of medicine.

These other treatments are prolonged narcosis, narcoanalysis, insulin shock therapy and modified insulin treatments. Finally electrical convulsive treatment and leucotomy. All these, except leucotomy, which stands in a class by itself, are characterised by the fact that the patient loses consciousness for a longer or shorter time. We do not yet know what happens when this occurs, nor, indeed, exactly how consciousness is achieved by the mechanism of the brain. Innumerable suggestions have been made as to how treatments affecting it "work," but probably the best is that

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somehow the responses of the individual are broken down and new ones are allowed to form. So far methods of investigating this have not yet been elaborated, although a study of dreams produced when under such treatments as insulin shock might be helpful, but this has not yet been done.

Prolonged Sedation.

Neurosis seems to have always been treated by narcotics and sedatives. It was obvious that some cases of hysteria, often confused with the excitement of mania or catatonia, showed what appeared to be over-activity of the brain. Nothing was more logical than that this should be treated by something which dulled the mind and induced sleep. One of the earliest narcotics used for this purpose seems to have been opium, which was mentioned in the Ebers papyrus. There it is stated that the goddess Tefnut cured the headache of the Great God Ra by giving him a medicine which contained the Berry-of-the-Poppy-Plant.

The sedative which had a great vogue—bromide—was a comparatively recent discovery, and was first found in the water of the Mediterranean by Balard in 1826. It was not until 1857 that Sir Charles Locock used it for the treatment of epilepsy. His reasoning was successful, although very confused, and the discovery was a fortunate chance. It was believed at that time that epilepsy was caused by masturbation, and the bromides were thought to reduce sexual desire. We know now that epilepsy has nothing to do with onanism and bromide does not reduce sexual desire unless given in fairly large quantities. The epilepsy in Locock's fourteen cases did benefit from the bromide which he gave because it acted as a sedative on the brain. At that time there was a considerable clinical confusion between epilepsy and hysteria. The success in fits naturally led to its use in functional nervous disease, with benefit to this type of illness also.

The discovery of bromide as a sedative replaced the indiscriminate use of such dangerous hypnotics as laudanum, which De Quincy was able to buy for a few pence a pint. Unfortunately, neither bromide nor opium nor any other hypnotic we possessed until recently was safe to produce sleep for longer than a few hours. The discovery of the barbiturate acid derivatives, however, placed comparatively safe drugs in the hands of the psychiatrist.

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Prolonged sleep as a treatment had been tried by Woolf in 1901, but did not gain popularity because no suitable sedative was available. In 1903 Fischer and von Mering discovered the oldest barbiturate, veronal, and since then hundreds of others have been available. Kläsi reintroduced continuous narcosis as a definite form of treatment, and it has become more or less general. It is used mainly for the wilder forms of acute mania in which the patient is so elated and excited that he is uncontrollable, unable to eat, and exhausts himself in the psychological storm. It has also been used in cases of obsessional neurosis, schizophrenia and so on, but is not so successful as in mania. In general its use is for excessive excitement or undue anxiety, to give the patient time to adjust himself. It has been found useful in those patients whose mental stability had been disturbed by the stresses of war, but some peace-time cases benefit also.

Prolonged narcosis has a definite death-rate, greater in the hands of the inexperienced than one expects, and is not a treatment to use indiscriminately.

The technique of this treatment is that the patient is kept in bed in a darkened room. He has had it explained to him that he is to have a long sleep and will awake rested without his worrying symptoms. Continuous observation by a competent nursing staff with a physician constantly available is an essential, the aim being that the patient is awake only four hours in the twenty-four, and during that brief period is fed, washed and so on.

Sleep is usually induced by a quick-acting sedative such as paraldehyde, but is continued by a barbiturate sedative such as dial, which is given up to twelve grains in a day, or somnifaine, which is injected up to six cubic centimetres in twenty-four hours. It is usual, when the patient has the injection, to give ten units of insulin and an ounce and a half of glucose, since that is found to prevent collapse.

The patient sleeps almost all the time for ten days up to three weeks. If the treatment is successful he improves in appearance, puts on weight and so on. He answers questions more rationally when not under the influence of the sedative, and is brighter and more normal.

There are, unfortunately, complications to this method of treatment. The patient may lie like a log in bed if the nursing

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staff are not careful to shift his position from time to time. The result of this is that his lungs become waterlogged, he develops hypostatic pneumonia and dies. Again dangerous collapse may supervene, and the physician must be constantly on the *qui vive* lest he be caught unawares.

When the patient is allowed to recover he is usually bright and apparently normal. Sometimes he relapses and becomes like he was before he had the treatment, but often he can be tided over this, particularly if psychotherapy is applied wisely.

One might ask, in the face of these risks and complications, whether it is worth while using such a chancy form of treatment. It appears that it is, but only in suitable cases. For example, out of 455 cases of manic-depressive psychosis which showed mainly manic excitement one-third were cut short. However, those cases which were not aborted were often much more amenable to treatment by other means and easier to manage, which is no little advantage in illnesses of this sort. Moreover, often the patient's agony of mind is reduced and much of the distress of his illness is forgotten when he recovers. This alone is valuable in sensitive people.

Narcoanalysis.

It has been known for centuries that people will behave or misbehave under drugs in ways which would not be tolerated normally. For example, the violent attack of fury in which the Malay indulges when under the influence of Indian hemp, when he ultimately runs amok with a kriss and kills everyone he encounters, is an example of the release of emotion in these circumstances. Often when patients are being given an anæsthetic they will become maudlin, and will then talk wildly, sometimes giving away intimate secrets, sometimes weeping, or occasionally using obscene language. Every anæsthetist can remember the gently nurtured lady or the refined clergyman who swore like a bargee and used words which would have been shocking in everyday life. Again, alcohol is well known to remove inhibitions. The beautiful spy beloved of the novelist always "plies her victim with drink," and the mediocre man who is really an enemy agent sits in the public-house near to a munition factory or barracks and picks up useful information from the semi-intoxicated. As alcohol goes in,

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discretion oozes out. Sometimes violent behaviour follows a drinking bout, and the man who becomes "fighting drunk," with subsequent police-court experience, is well known. This may be exaggerated into the psychiatric condition known as *mania-a-potu*, or pathological intoxication.

Again, it is sometimes easier to induce hypnosis when the patient is under the influence of a drug, such as *cannabis indica*. This was well known to the older hypnotists, and probably dates back to the discovery of hypnotism in the East. In this dreamy, half-narcotised state the patient would often discuss matters he would avoid at other times.

The use of this knowledge in psychiatry cannot be credited to any particular individual. Like so many treatments, it has developed and grown, and cannot be claimed by any particular physician. It has been found, however, that in some selected cases facts can be rapidly unearthed and emotions produced which would take considerable trouble to obtain if the patient was in a normal state.

Narcoanalysis can be rapidly and safely induced by the valuable intravenous barbiturates. The ones most frequently used are sodium evipan or pentothal. The technique is simple. The patient is laid on a bed or seated in a comfortable armchair where he can rest easily. It is explained to him that he may feel a little drunk and sleepy, but that this is nothing to be concerned about and will soon pass off. Sometimes it is advisable to have the room darkened a little. The drug is then injected very slowly into his antecubital vein while the patient is persuaded to talk. As soon as he starts to come under its influence the injection is stopped, although the needle is left in place so that more can be given if necessary. The patient looks a little drunk. He has a flushed face, sweats and his speech is thick. Whilst in this condition the physician induces him, by firmly suggesting, not bullying, to think of the relevant situation. If he has lost his memory, for example, he is asked to go back to the point when he can remember, and is then led forwards towards the beginning of the amnesia. Bit by bit he brings new material to the surface, and slowly his memory returns. Sometimes the patient has had some terrible experience—for example, during the war many air-gunners in the tail turret were in crashes in which the whole plane was destroyed

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by fire, but because of their position were able to escape, although they could hear the screams of their comrades. Since air-crews were usually very friendly with each other, and the constant presence of danger gives strength to this bond of affection, the terrible deaths of their comrades affected them even more than sensitive bystanders. This was aggravated because there was always a feeling of remorse that they might have escaped more quickly and attempted to rescue their fellow air-crew. This was, of course, nonsense, since the heat of burning petrol in most cases made any attempt to help the trapped men suicidal, but such a feeling was very common.

Sometimes under narcosis the patient would enact the scene with hysterical vividness ; throw himself about in the frenzy of emotion, cry out and even scream. It was not unusual for him to weep, and cover his eyes with his hands and so on. Usually, however, the analysis was of a less emotional nature. It was common, as Millais Culpin found from the treatment of patients in the First World War, that the historical present was more evocative of emotion than the past. It was better, for example, for the patient to describe the events as if they were happening at the time rather than as if they had happened. He would show more emotion if he said, " The plane is out of control. We are crashing, here it comes ! My God ! it's afire, etc.," rather than, " The plane was out of control, we crashed and the petrol caught on fire." As Culpin drily remarked, it is remarkable the effect which a grammatical tense can evoke.

Under narcoanalysis the patient did not always produce the material desired. Sometimes fantasies replaced the description of reality and strange, crazy dreams were described as having actuality. These usually revealed the innermost wishes of the patient, but were not used very much by physicians who did this work, since the attempt being made was to clear up the immediate problems, the recently buried emotion, amnesias and so on, rather than produce a radical change in the personality.

It was found to be important that the patient did not go off to sleep, or recount his emotional story and then gloss it over. Once the physician had revealed the cause of his symptoms he attempted to keep the patient reverting to it until he came out of the influence of the drug, since it was found that he then tended to

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remember it better than if allowed to return to more mundane topics.

When the patient was relaxed and half asleep it was often found possible to remove symptoms of hysterical paralysis, hysterical limitation of movement, contractures and so on. This was not, of course, a new thing, since giving an anæsthetic and moving a fixed joint, say, was a commonplace. It was possible, however, sometimes to relate the reason for the hysterical symptom to the experience and rid the patient of both his contracture and his emotion at the same time. If he were "paralysed" it was always desirable that he be persuaded to walk about, even though still in a confused and unsteady state, so that he would awake realising that his limbs were usable and he was now normal.

One of the disadvantages of this treatment was that although the patient was cured of his symptoms, he was of no further use for military purposes. Indeed, sometimes the threat of return to duty would produce anxiety symptoms, similar to the recurrence of symptoms when an hysterical illness in the First World War was cured by hypnosis and the patient feared to return to the front. The writer had a good example of this in a patient under his care. He was a young man who had been trained as an air-gunner. Unfortunately, on his first operational trip, when on the way to Gibraltar, the plane, a Lancaster, fell into the Channel. It was a bitter winter's day in December, when there was thick snow on the ground and a freezing wind was blowing. The plane plunged into the water, and all the patient's struggle to escape was under the sea in pitch darkness. After some difficulty he opened a door and reached the surface, half-drowned and terribly frightened. An automatic device had released a pneumatic float which inflated itself, and he swam through the icy water to it. By this time he was so chilled by the cold that he could not climb aboard, and time and time again slipped back into the water. Finally he managed to hold on to a rope with his teeth, hooked his legs over the edge of the dinghy and fell in. Once aboard he looked round in the thin moonlight to see if he could discover anything of the submerged plane or his comrades. He did see the door of the plane float by, and then one of his fellow air-crew, obviously dead. Later another also drifted by, and he, too, had died already of the exposure and cold. The patient was alone on a tiny dinghy in

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the midst of a sea as black as tar and slashed by a razor-edged wind. He fumbled about to see if he could find food or alcohol to warm himself. In one of the pockets of the dinghy he discovered what he thought was a bottle. This he tried to open with his teeth, only to find that he had bitten through the bulb of a torch with which he might have signalled for help. After an hour or two of bitter misery he became quite delirious and started to shout and scream. He regarded the sea as a personal enemy, and hurled defiance at it. "You shan't get me! You shan't get me!" he cried into the darkness. Then he had the delusion that he was sitting at home in his mother's warm kitchen toasting himself in front of the red-hot fire. He even hallucinated the glowing stove and felt the warmth of it in his flesh.

After five hours of this the dawn came, and far away in the sky he heard an aeroplane flying overhead. He shouted and waved, but it flew on and disappeared over the horizon. He was now nearly mad with cold, loneliness and misery. The temptation to throw himself into the water was almost unendurable, but he held on tenaciously. At last a Lysander flew slowly overhead, looking like a clumsy dragon-fly in the cold morning light. He waved, and saw it turn to circle overhead. The pilot waved back. Then a little while later he heard the drumming of a rescue launch, and he was dragged aboard. Saved.

The patient who had this terrible experience attempted to return to flying, but found that even to enter an aeroplane produced violent tremors, he could not sleep, had bad dreams and so on.

Under narcoanalysis he related the whole experience with remarkable vividness and released considerable emotion. He lost his symptoms, but then consciously refused to fly. Although the penalties for doing so were severe in the R.A.F., he said that he would prefer to face them rather than fly again. No doubt this was a clinical triumph from the psychiatric point of view, since the patient was dealing with his problems on a conscious level; from the Service point of view it was a failure.

As a general rule it was found that patients amongst air-crew who developed a neurosis after crashes were those who had either been trapped when the plane was in danger of exploding, who had been in a burning machine and found difficulty in escaping or else were carried under water by a plane which fell into the sea.

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All of these are experiences likely to produce severe emotional reactions.

The writer had a somewhat similar case to that recorded above at the Seamen's Hospital. This was a man who complained of various anxiety symptoms—insomnia, trembling, lack of appetite and so on—and was unable to return to sea because of his neurosis. He was one of three brothers who had all served on the same ship. This was a tanker which was blown up by a torpedo, and the explosion killed many of the crew. The others were thrown into the water, but managed to swim through the flaming petrol which covered the sea and escape. This was a terrible experience, but the patient was perfectly conscious of it. There was every reason why, therefore, he should have dealt with it on a conscious level; stated frankly that he had had enough, and was afraid to face further experiences of that kind. He was given narcoanalysis, and revealed a few further relevant facts. When he was thrown into the sea and got beyond the burning petrol, he found a raft. He climbed aboard this and rested. After a time he looked about, and saw a body, which he identified as his brother's, float by. For some reason he did not leave the raft to try to save the brother, although in all probability he was already dead. It was this fact that the patient revealed with a great deal of emotion. After he had done so he lost his symptoms, and finally returned to his work as an able seaman.

The problem of repressed guilt in such cases is a strange one. Most of the patients who responded to narcoanalysis have already been through an experience severe enough to daunt most men. That they did not do more, even though they could have done so, is understandable after a severe shock. Anyone who has had a large bomb drop near him, for example, knows the paralytic effect it had on the faculties. That such patients felt that they ought to do more is often a sign of the high morale which they had, and the remorse was evidence of the almost impossible standard which they had set themselves. In narcoanalysis, as in any other form of analysis, it was often the fact that the physician was unshocked by the revelation that helped the patient as much as the emotional release.

Although it was decidedly useful in war-time, it must be admitted that narcoanalysis is a very rough-and-ready treatment.

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Firstly, it is of value only when there is some recent severe traumatic experience. For deep-seated aberrations of the personality it is too brief, too fugacious, to be of value. These must be treated by ordinary psychoanalysis. Secondly, it is improbable that the patient ever revealed anything which he did not wish to do. Much nonsense has been written in popular medical works on "truth drugs" and "truth serums." Frankly there are no such things. Of course, occasionally, under a suitable sedative, a criminal will boast of some crime which he has committed. As we have already pointed out, alcohol has the same effect, and detectives are wise in frequenting the public-houses used by those who lead a life of crime. This, however, is quite a different thing from extracting knowledge from a man who is determined to withhold it. Narcoanalysis was no use for attempting to obtain information from spies who fell into the hands of the opposing forces. It is only when the patient knows that the physician is on his side, as it were, trying to help him and cure him of painful symptoms, that he will give his co-operation and produce the emotional material which is sought.

In general one may say that narcoanalysis is of very limited application, and when it is used the value and limitations correspond very much to hypnosis, the advantage of it over hypnosis being that it can be induced in a few minutes, whereas hypnotic treatment takes some time to induce and is much more fortuitous in its effect. Since narcoanalysis has been popularised by plays, films and novels it is no uncommon thing for patients to demand that it should be used for a quick cure. As those patients who ask for it are usually those least fitted for its exhibition, it is as well to realise that, although valuable in a very limited sphere, this treatment is not one of much value in ordinary peace-time practice.

Insulin Shock Therapy.

The treatment of schizophrenia by large doses of insulin was first used by Sakel in the Vienna Hospital Clinic. He had been treating drug addicts, particularly those using morphine, and thought that the symptoms which occur on withdrawal of the drug might be countered by large doses of insulin. He discovered that he obtained the best results when he gave such large doses of insulin that it produced symptoms of hypoglycæmia. This, of

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course, if carried far enough will result in unconsciousness and finally death.

It is not altogether surprising that Sakel passed on from his drug-addicts to schizophrenics. Those who become addicted to any drug are practically never normal persons, but usually have some psychical peculiarity. The exceptions, if such exist, are those unhappy persons who have some constantly painful disease from which they can rarely obtain relief, and that only by the use of some analgesic or narcotic drug. The usual drug addict is an abnormal person and, indeed, was so before the habit was formed. It is not easy to compare mental states, but one might conclude from experience of drug addicts that these people are usually in a state of tension and anxiety. It is only when they have this anxiety removed by a drug that they approach the equanimity of a normal person. This is probably the reason why normal people find the effects of a drug such as morphia so disappointing and experience so little of the euphoria described by the addict.

Since insulin therapy improved drug addicts, it was obvious that the experiment of using this on those who were abnormal in other ways was warranted. Sakel tried it on schizophrenics and, to his surprise, found it successful. Here again was a testimony to the policy of the Vienna Clinic, where every fresh idea was examined critically and, if it showed the slightest promise, tried on suitable patients. This had resulted in the discovery of malaria in the treatment of general paralysis of the insane and now produced the use of insulin in schizophrenia.

Insulin treatment cannot be given as an out-patient routine, nor can it be used in a private house (unless, of course, the patient were a millionaire and able to engage a squad of nurses and a resident physician). For all practical purposes it must be employed in hospital in a special ward with trained nurses and a doctor who is available within a few minutes, since crises may arise which need his immediate attention. If a large number of patients are being treated, more than one doctor should be on call, because there is always the possibility that an emergency may occupy one physician whilst other patients are in need of help.

All schizophrenics are not suitable for insulin shock and, since the facilities for treatment are not inexhaustible, cases must be

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selected carefully. It has long been the view of psychiatrists that schizophrenia had a much better outlook when the patient suddenly became ill rather than when the onset was quiet and insidious. It is obvious therefore that the patient who had been slowly becoming abnormal for years should be avoided (since he is not likely to benefit) in favour of the one who seemed to be apparently normal and then suddenly developed a mental illness with confusion or violence. In the selection of patients the wise physician has always examined the nature of the illness and its mode of onset. Again, the soil in which the disease grew, the basic personality—that is, the type of person before the onset of illness—has always been noted to have a strong influence on recovery. The social, frank, balanced sort, even without the benefit of insulin, had a much better chance of regaining normality. Similarly with insulin the patients' previous personality was found to be a valuable guide. The queer, odd person who has never fitted in with everyday life, and who was obviously slowly becoming normal, was unlikely to be cured.

When treatment is to be commenced, the patient, who has been carefully selected, is placed in a ward with others of the same type. A well-trained nursing staff is available, with an experienced sister responsible for the unit. The patients often sweat and are restless during treatment, so the temperature of the ward is kept rather warm. Food is given in proper quantities, and patients are observed to see that it is eaten; otherwise if this is not done it may result in "after-shocks" (collapse due to insufficient sugar in the blood). Apparatus is available in the ward so that emergencies can be treated at once.

Insulin is usually given early in the morning, at, say, 7 a.m., and no food will have been taken the night before. Twenty units are given the first morning, and the dose is increased daily by a further twenty units. In skilled hands it may be increased more rapidly if the patient shows little response.

Sakel described four phases of this treatment.

Phase 1.—This is the period during which insulin is given until the onset of the first coma. The patient may experience various symptoms due to the diminishing amount of sugar in the blood. During this time he may be flushed, and this is sometimes followed by pallor, hunger, perspiration or sleepiness. Occasionally he

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becomes excited or euphoric, and this may progress into violent excitement. He may have to be protected against his own restlessness by the bed being padded or covered by a net such as is used in Vienna. (Although this net is useful, the English physician always receives a shock to see patients placed under it like calves on the way to market—but the patients never appear to mind its use, even when they are not in the state of confusion in which it is used during insulin treatment.) Sometimes the patient has epileptic fits during this stage, but these are not supposed to be so beneficial as those which occur later on. The later stages of this phase are terminated by sopor. This is increasing confusion and loss of response except to painful stimuli. The patient may make grotesque sucking noises in these later stages.

Phase 2.—The patient now lies in bed without responding to even the loudest shouting; his limbs may be stiff at first, but later relax. Later still all the reflexes disappear except the plantar reflexes, which become extensor. Finally what is known as "hypertonus in extension" appears. This is the stiffness of the limbs with dilated pupils, which is similar to that which follows cutting the reflex paths coming from the brain—what is known as decerebrate rigidity. When the patient becomes so deeply comatose as this it is imperative that the treatment be stopped, or he will rapidly die. Some patients do not pass into this profound coma, and remain in the early stages, which are known as sopor. In this case they are allowed to stay soporose for about thirty minutes, and then the treatment is terminated by giving glucose through a nasal tube.

This phase is the dangerous one. Sometimes the patient does not respond rapidly to the nasal feeding with sugar. The pulse also may become irregular, and the blood pressure fall. Epileptic attacks may occur and the patient remain comatose. In this case he is treated by the intravenous injection of glucose. After the coma has been terminated the patient's clothes are changed, since those he has been wearing are soaked with sweat.

The most dangerous complication of this treatment is irreversible coma, which means that the patient remains unconscious in spite of the fact that he has been given glucose. This is treated by intravenous injections of glucose, calcium chloride and vitamin B₁. Carbon dioxide gas is inhaled and the patient treated for shock.

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This usually causes recovery within twenty-four hours, but some patients die from it in spite of every effort.

Phase 3.—This is the seventh day of each week of treatment, when the treatment is not given and the patient allowed a rest.

Phase 4.—This phase is the terminal one, during which the patient's injections are rapidly reduced in strength until they cease. This is done so that his physique is able to adjust easily to normality.

Sakel believed that those cases in which fits occurred late in the coma benefited from them, and this led him to use such attacks artificially produced. This technique has rather fallen into abeyance, but convulsions are often produced on days when the patient is not given a coma. There seems to be no particular virtue in inducing the fit during a coma, and there is the added danger that it complicates observation of the patient's condition.

One danger of insulin therapy which must not be forgotten is that although the patient will sometimes recover from his insulin after the sugar has been given, he appears perfectly normal and eats a good midday meal. Then later in the afternoon, say about three or four, he suddenly develops a fresh coma and becomes unconscious. Patients are, of course, given sugar and told to eat it if they feel unusual in any way, but most physicians keep them under observation, although they are permitted ordinary recreation to prevent catastrophes. The delayed coma, as it is called, usually responds to intravenous glucose injection.

In some cases the patient behaves in a childish way (we have already pointed out that some make sucking noises, and even suck their fingers) during the early stages of sopor. Some even talk in a puerile manner, and reply to questions regarding their age by an absurdly young figure; stating that they are five instead of twenty-five and so on.

Unusually the patient commences to have periods of normality whilst under the influence of the insulin. In some insulin causes a return of the abnormal behaviour, and according to Sakel it is bad practice to stop treatment at this point, since it tends to impress the abnormal symptoms on the patient's mind—treatment must be continued until the symptoms pass away. Some patients show an increase in their abnormal symptoms under insulin, and in

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such cases it is good practice to give larger doses until this is subdued.

The duration of this treatment naturally depends on the progress made by the patient, but it is usually terminated in a few weeks. It has, however, been continued for as long as two years, but it is improbable that the results are any better than when a shorter period is used. Moreover, the patients must be of particularly tough fibre to endure a daily coma for so long, and most of us, however determined, would blench at the prospect !

Results.

Henderson and Gillespie believe that certain points are established regarding insulin treatment. These are :

“ Insulin is capable of modifying the clinical picture in schizophrenic syndromes to any extent, even up to the complete abolition of all schizophrenic symptoms. It does so in a progressive way, and in a manner which suggests a quantitative relationship between dosage and clinical effects. The effectiveness of insulin is closely related to the duration of the illness ; and the shorter the antecedent period of illness, the more likely is insulin to be effective. Insulin is capable of shortening the course of schizophrenic illness.”

The problem is really whether insulin merely shortens the illness or whether it produces a real cure. Possibly these cases would have recovered spontaneously if they had been left alone. Moreover, it must be remembered we are not dealing with the generality of schizophrenic patients, but with a specially selected group, so the usual statistics do not apply and comparisons are difficult to make. Again, the difficulty of comparing the statistics of different hospitals, because of the diagnosis, which seems to vary to a great extent from place to place, is very evident.

Sakel claimed that the recovery rate without insulin was about 20-30 per cent., but with insulin therapy as many as 70 per cent. of the patients had remissions. Bond and Rivers in 188 cases found improvements in 55 per cent., diminishing to 33 per cent., in four years. The immediate recovery rate was five times control cases, and the final recovery was twice the controls. In the New York Hospital Malzberg found in a series of 1,039 cases 12 per cent. recovered and 27.1 per cent. were much improved, compared

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with 11.2 per cent. of untreated cases. Two years later 12.7 per cent. were considered recovered and 14.2 per cent. much improved. Chesney and Drewry investigated 500 cases from two to twelve years after discharge from the Bloomingdale Hospital, and discovered that 47 per cent. were well enough to live outside a mental hospital and that 26 per cent. had either completely recovered or were showing great improvement. Those who had been admitted within six months of showing symptoms showed either 60 per cent. recovery or much improved. The Swiss claim 70 to 80 per cent. recovery when the patients are treated within six months of the onset of symptoms. The results probably vary according to the experience of the therapist, and this was found at the Pennsylvania Hospital, where the results improved from 46 per cent. remissions to 79 per cent. when the treatment was removed from the hands of various unskilled physicians and placed in those of one specialist who did nothing but insulin treatment. As in all treatments, results improve when the physician is able to attend meticulously to every important detail and is experienced enough to take risks which would frighten the tyro, although capable of being dealt with expeditiously by an expert.

The argument that insulin therapy is being used on early and selected cases and apparently cures patients who would have recovered if left alone was strongly reinforced by the researches of Professor Penrose, who is Galton Professor of Eugenics at University College, London. Using a statistical technique, he investigated the possibility of recovery when he was given the age of onset of a disease, say, schizophrenia. From a vast number of statistics he found that this was calculable. When he applied this technique to the statistics of recovery in the case of patients treated by insulin, he found that "the figures indicate clearly that quite good results were obtained after three or four years by shock therapy in cases of psychosis with late onset, but no appreciable effect was obtained by all the vast amount of work with coma or convulsion therapy alone in the cases of early onset, the majority of whom were diagnosed as schizophrenia."

This complicates the issue. The exponents of shock therapy insist that their treatment shortens the illness and cures in early cases. Professor Penrose believes that it is valuable in cases of later onset after three or four years. The truth of the matter

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remains to be discovered ; yet, we must confess, if we had a wife or a daughter suffering from schizophrenia all the statistics in the world would not persuade us to delay treatment for one moment longer than possible, for even professors are sometimes wrong, and statistics are sometimes based on fallacious data.

Modified Insulin Treatment.

This is the use of insulin to produce symptoms of low blood sugar (or hypoglycæmia) without allowing the patient to slide into coma. The aim is to increase weight and improve physique. Now, it has been known for a long time that people who were on the fat side were less likely to break down than those who were thin. For example, long before the Second World War it was known that plump pilots withstood strain better than thin ones, and the Royal Air Force produced statistics to prove this. Again, it was found that many young girls who thought that they were too fat, and dieted severely—the so-called “Banting”—became depressed. Indeed, severe dieting was so often associated with suicide that many coroners expatiated on the foolishness of the young in following such a dangerous fashion. Often, of course, the patient starved herself or himself because of some mental illness which had already been established, but the symptoms were blamed upon the diet. There is no doubt, however, that mental illness and poor physique are interlocked to some extent. Again, patients who are thin easily become mentally ill ; psychotic patients tend to be thin, and an increase in weight is often an indication of improvement ; whereas loss indicates a relapse. The hackneyed quotation from Shakespeare is inevitable :—

“ Let me have men about me that are fat,
Sleek-headed men, and such as sleep o’ nights :
Yond’ Cassius has a lean and hungry look.”

He saw in fatness a virtue which thin men lack, and this shows his remarkable perspicacity, since few other writers have stated it so clearly.

As in the treatment of schizophrenia, the patients upon whom it is used are selected carefully. Those most likely to benefit are neurotics who formerly had had a good weight, and after passing through a period of strain became thin, anxious and tense. In such cases the appetite is poor, and even when food is eaten it is

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not used to gain weight because of the amount of energy expended to maintain tension. Severe depressives do not benefit, nor do chronic neurotics who have *not* lost weight.

The selected patients can be treated in a ward much the same as when full treatment is being given. They are not allowed to eat after 8 p.m. on the previous night, and the next morning at 7.30 a.m. are given 20 units of insulin. This is increased daily until up to 100 units daily are being given. They are kept in semi-darkness but under observation. If at any time it seems a patient is becoming so drowsy that he cannot eat, he is awakened and given sugared tea. When he has been drowsy, sweating and obviously under the influence of insulin for three hours, he is awakened and given the sugared tea and a meal composed of sugar and starch. The rest of the day he is allowed up and encouraged to eat full meals. Since large doses of insulin are not used, the perils and alarms which accompany the full therapy are not common, and when anything untoward appears to be happening it is usually easily terminated by the inevitable sugared tea.

Many neurotic patients are reluctant to accept the fact that their illness is due to psychological factors, and grasp eagerly at the idea that the symptoms are due to a breakdown in physical health. This makes them accept insulin therapy with avidity, but it is obvious that unless the basic psychological causation is unearthed the danger of future relapse still remains. It is the physicians' duty, therefore, to discover, if possible, what has caused the original illness.

The results are exceedingly variable: some patients put on weight and lose their symptoms rapidly; others appear to recover and gain some weight but just as easily relapse; others show no benefit whatsoever.

It is obvious that modified insulin therapy depends on the type of patient selected as to whether it will be of value or will fail, or even finally leave the patient worse than before (since it will have encouraged the idea that he has been physically ill and diverted him from facing the real causes of his trouble). A grave duty rests upon the psychiatrist when he is recommending patients for such treatment; an error on his part may make the final cure infinitely more difficult in the long run.

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Electrical Convulsive Treatment.

It has been a commonplace of psychiatry that patients who had epileptic fits rarely developed schizophrenia and schizophrenics rarely had fits. Although this had been noticed for many years, little was ever done until Weickhardt in 1798 suggested that patients should be treated by giving camphor until they had attacks of dizziness and even convulsions.

This treatment was reapplied, after it had fallen into disuse, by v. Meduna of Budapest, about the same time as Sakel was using insulin. In some of his later work Sakel recommended that fits be induced by giving camphor compounds, and, indeed, came to the conclusion that better results were obtained when convulsions either occurred spontaneously or were induced whilst the patient was in insulin coma.

The camphor compounds and the other chemicals used to replace them, such as picrotoxin, had many disadvantages. Firstly, they had to be injected rapidly into a vein, so that the body was flooded with a wave of the fit-inducing fluid. This needed considerable manual dexterity, and when a patient had small veins—and many women, for instance, have them—it caused great difficulty. There was a further trouble inasmuch as, if the injection failed to produce a fit, the patient experienced such a feeling of nausea, fear of death and general discomfort that none but the most determined could face further experience with it.

This unhappy state of affairs was terminated by the discovery of Cerletti and Bini that fits could be safely and easily induced by passing an electric current through the brain. Although this sounds a dangerous and formidable undertaking, it is much safer and easier than the injection. An electrical machine was devised, mainly through the efforts of Grey Walter, which automatically gave the exact dose of electricity and prevented an excessive electrical shock. The unconsciousness was immediate, instead of the patient feeling the horrible sensation of "going under" which accompanied camphor or similar compounds (such as cardiazol, metrazol, triazol, etc.).

Wider experience, which could be gained by the electrical machine, showed that the treatment was of little value in schizophrenia, for which it was originally developed, but was valuable

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in cases in which depression was the main feature. In involuntional melancholia, in manic-depressive depressions, reactive depressions and so on it was most beneficial. Coma and confusion were often terminated by one single convulsion.

The patient must be physically healthy. He will have been selected carefully, and will have no high blood pressure, no lung or heart disease—in fact no illness which might be exacerbated by the fit. He will have depression of some sort. The treatment can be administered to an out-patient, so except for the mornings on which he has the electric shock he can often follow his ordinary occupation. If he is not resident in the hospital he can be treated in his ordinary clothes, but these must be loosened at the neck, waist and so on, and his shoes removed. He must take out his dentures. It is better if his stomach and bladder are empty, so it is unwise for him to take a meal just before treatment.

He lies on a couch, with a low pillow under his head and a firm pad or hard cushion under his back. On each side of his forehead two areas are moistened with saline and the electrodes are applied. The resistance of the patient's tissues is then measured by the machine, so that one can see that the connections are properly made. If all is well, two nurses assist the physician, one holding the patient's hips and the other his shoulders. A rubber gag is inserted into the mouth. The switch is then pressed and the current passes. This is usually about 70 volts for 0.35 second. Two things may occur. Either the patient will have a sub-shock and lose consciousness for a brief period, or else he will have a full convulsion. If he has only a sub-shock, larger voltage may be used, but if he has a convulsion he will at once become rigid and stiff. This then passes into rapid flexion and extension, so obvious in a spontaneous epileptic fit. After a time this also passes away. He has by now changed colour, and is blue and struggling to breathe. Carbon dioxide and oxygen are given, and his normal colour rapidly returns. He is then laid on a bed, and sleeps for an hour or so. When he is quite normal he is allowed to get up and return home, and it is wise for him to rest there for the remainder of the day. He may work on other days and return the following week for another convulsion.

The dangers of this treatment are that in some cases the patient develops fractures of the spine through the violence of the fit.

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These are not usually serious—merely chips of bone—but occasionally they do involve the bodies of the vertebræ and must be regarded as real complications. They are lessened by careful control during the convulsion. Their presence causes considerable aching and pain in the back. Various resources are used to avoid them—for example, some psychiatrists use curare, which causes temporary paralysis of the muscles; others use spinal anæsthetics. If careful control is maintained these additional measures are not necessary, except in very special cases. Other dangers are usually caused by poor selection of cases: heart disease or lung disease may be exacerbated, rarefaction of the bones may cause fractures. These can all be avoided by careful selection. No cases of heart or lung disease will trouble a careful psychiatrist, but even with care some 3 per cent. of fractures may occur.

A complication which causes considerable nuisance, although it naturally is not dangerous, is loss of memory. The patient frequently complains that he cannot remember things which were perfectly familiar before he had his convulsions. This may be bothersome for a time, but usually passes away in a few months or a year. Dementia must be very rare, but the writer has seen a man who became demented following convulsive therapy for depression caused by a head injury. No psychiatrist with any judgment would give such a case fits, and this sequel would never have occurred had reasonable judgment been used. Fatal accidents with convulsions are very rare, and it is usually estimated that they are less than one in a thousand cases. Many psychiatrists have given thousands of fits without ever seeing a fatal case.

The results of convulsive treatment are generally believed to be good in the case of depression, but here again it is complicated by the fact that only specially selected cases are treated. Muller, for example, claimed that 58 per cent. recovered and 13 per cent. were unimproved in 148 cases. Fitzgerald found 78 per cent. recovered and 4.7 per cent. were unimproved in 150 cases. Probably 50–60 per cent. benefit when cases are properly selected. In schizophrenia the consensus of opinion varies, but it is doubtful if any benefit at all follows convulsive treatment. At the most it raises the recovery rate from 20–30 per cent. to 30–40 per cent., but that would only be brought about by including cases of stupor,

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depersonalisation and so on. The neuroses do not benefit, and should not be given this treatment. Hysteria may appear to improve, but it will do so with any spectacular treatment, and relapse is almost inevitable. Moreover, it diverts the attention from psychical causes, which can be removed by analytical treatment. Similarly, anxiety states are not benefited. The same is true of obsessional neurosis. We must recognise that convulsive therapy is very limited and that its field of usefulness lies only within the depressive illnesses.

Electro-narcosis.

An interesting advance from convulsive treatment is the technique known as electro-narcosis. A different apparatus is used which permits a gentle rise of current, instead of the sudden shock of electrical convulsive treatment, but this persists for a longer period. Instead of lasting about a tenth of a second the current passes for as long as three seconds. The strength is about 200 milliampères. Violent muscular movements are controlled by curare, which causes temporary paralysis.

This treatment appears promising in schizophrenia. Milligan, for example, found that of seventy schizophrenics, 44 per cent. showed complete remission and a further 17 per cent. made a social recovery. Only 14 per cent. failed to respond.

The treatment is safer than insulin coma, and the most obvious disadvantage appears to be that sometimes the patients become unconscious, which is rather frightening. Occasionally breathing stops but oxygen is given artificially and it is soon started again. After treatment some patients complain of headache, lassitude and a feeling of constriction round the chest, but often nothing abnormal at all is felt.

Obviously wider experience with electrical methods of treatment will give improved technique and various advances will follow.

Prefrontal Leucotomy.

It has been known for many years that damage to various parts of the brain does not necessarily lead to death, but may result in changes in the personality. For example, after head injuries patients are often irritable and prone to violent tempers: when parts of the brain have been resected because of tumours there was sometimes a grave change in the characters of the sufferers.

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Since the transformation was usually in the direction of childishness and the personality deteriorated, this phenomenon was not considered of value in treatment.

Many years ago the writer observed that such a change could be beneficial. This was due to a clot of blood caused by heart disease which lodged in the middle cerebral artery. This artery supplies that part of the brain which is concerned with speech. Before this accident the patient was wildly hallucinated. She spent much of her time raging up and down the ward shouting defiance and contradiction to her hallucinations and, of course, had no appreciation that the "voices" were in her own mind. Suddenly the embolus (as such a clot is called) lodged in the artery, and she immediately developed a right-sided paralysis and inability to speak (aphasia). She did not lose consciousness, and noticed that the voices ceased at the same instant. Owing to the paralysis, she was confined to bed, and not for many weeks did this improve and her speech partially return. She was then able to answer questions and explain how her hallucinations had passed away.

Now, what could have happened? It is obvious that with the abolition of her speech functions not only did the power of expressing herself in words—the motor function—disappear, but some of the internal ideational constructive power also passed into oblivion. This was the source of the hallucinations, and, since this was damaged, the "voices" ceased magically. Such an experience does much to uphold the view of J. B. Watson that thought is but suppressed speech.

The writer suggested to a brain surgeon that in hopeless cases it might be worth while producing such an aphasic condition artificially (by tying a vein or artery), but he was unenthusiastic, because he feared that the Board of Control would disapprove. No doubt others had similar experiences, but they came to nothing for the same reason.

It was Moniz, a Portuguese psychiatrist, who performed the first deliberate operation. He did this by the injection of alcohol into the prefrontal lobes. These are the so-called "silent areas" at the very front of the brain—they are called silent because no paralysis or very obvious results follow their damage. Moniz thought that mental tension was due to fixing of the cortical cells, which continued to function in a rigid way instead of being

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interchangeable. As alcohol was rather a dangerous and chancy method, it was later substituted by the use of a knife, which itself became modified to produce the best results. The tracts of white matter in the brain were severed by the knife, but the areas in front of the incision were usually not removed. Different surgeons in America, on the Continent, and in England have used variants of this operation. In most cases both sides of the brain were severed.

The operation does not cause pain. The leucotomy instrument is introduced through a burr hole under local anæsthetic, and consciousness is not lost. After the wound has been dressed the patient is returned to bed and a most careful watch is kept to observe any hæmorrhage (which is the most common complication) which may occur.

The type of patient who is said to benefit from this operation is the one in whom there is intolerable tension and who is not responsive to other forms of therapy. In schizophrenia, for example, it is sometimes found that the patient has not improved after insulin treatment and continues to suffer terrible unhappiness. Often he is tortured by continuous hallucinations, which abuse and vilify him, and by delusions of persecution which terrify him, so that he is agonised by constant misery. Since such patients sooner or later deteriorate, and after two years are unlikely to recover spontaneously, and about four years after the onset of the illness are unresponsive to insulin therapy, it is reasonable to go to considerable lengths, even risk of death, to spare a lifetime of a terrible psychosis.

Depression is less suitable, because it is well known that those patients who suffer from it may recover, even many years after its onset. Deterioration occurs only as a terminal event, if at all. The depressive illnesses of the manic depressive type, which come on spontaneously and pass off for no apparent reason, are also unsuitable. It is the depressions which follow involution, mainly in women, which are claimed to give the best results, but it must not be forgotten that this illness recovers spontaneously in about 60 per cent. of cases.

The other type in which prefrontal leucotomy has been recommended is obsessional neurosis. The patient suffering from this illness does often become worse in spite of every form of treatment,

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and is incapacitated. So far few cases have been treated by operative means, and it is impossible to say that it should be used. Even in severe obsessions spontaneous cure has occurred, and may take place at any time.

What, one might ask, are the disadvantages and dangers of cutting the brain to cure mental illness? The actual dangers of the operation are firstly hæmorrhage and then fever, either due to brain damage or to sepsis. If the patient is fortunate enough to avoid these, there is the more remote danger of epileptic fits. These may occur in great severity and up to some months after the operation. Other complications are bed-wetting, sleepiness, severe and lasting confusion, and paralysis. Although they can be avoided by careful technique, they may result not from the actual cutting of the brain, but from hæmorrhage into its substance, so that operative skill cannot absolutely avoid them.

Since the operation, like other brain damage, removes higher control, it may be found that the patient is more irritable and even violent when he is convalescent. This may persist indefinitely, but usually passes away. Deterioration of the personality always occurs to a greater or lesser extent, and is shown in what is called "emotional dementia." The patient has a diminished interest and a poorer judgment; he behaves unsuitably and is childish and unselfconscious. His conduct may be careless and filthy, sometimes disgusting, owing to his lack of appreciation of what he should do. He is not the man he was, and has lost much of what he had before, even when ill. Some intellectual deterioration may occur. Often he is robbed of ambition, and content to live at a lower level than previously.

The actual danger of the operation is from 5 to 10 per cent. in some cases, although certain operators have claimed to have a death-rate as low as 2 per cent. Undue optimism has spoiled the reports of many surgeons, but some are unduly pessimistic. In one series Smith and others found in schizophrenia that out of sixteen none recovered, 7 per cent. improved and 93 per cent. remained unchanged. They said, "We must state that the treatment does not look promising for schizophrenia." Heilbrun and Hleto in a series of ten cases had two deaths, and after ten months only two cases showed any improvement. One patient was worse and had developed fits. Elfield in a series of nineteen

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patients had one death, but eight were able to return home and six seemed to have returned to the state in which they were before their illness occurred. Another two had become euphoric. Other psychiatrists give a much more optimistic picture. For example, Ziegler gave a survey of 582 patients, most of whom were schizophrenic, in which only eleven deaths occurred and 235 patients had returned to work.

The surgeons who specialise in this operation have constantly asked for cases in which the disease has occurred recently. *It is, however, just these earlier cases which would have recovered spontaneously and which ought not to be submitted to it.*

The writer has stated elsewhere that prefrontal leucotomy should never be used "until every other treatment has been exhausted." This it is still felt is incontrovertible. The desire of the brain surgeons to pick earlier and earlier cases should be resisted, not only because it subjects patients to a serious operation when they might recover spontaneously, but also because these patients are just those who are likely to recover with insulin treatment (or, in the case of melancholics, with electrical convulsive treatment). Those who claim recovery in early cases as a triumph of brain surgery are perpetrating a ludicrous travesty of the truth. There is a great difference between prefrontal leucotomy and those other treatments which have already been discussed (prolonged narcosis, narcoanalysis, insulin and electrical convulsive treatment), inasmuch as in leucotomy we are doing something which cannot be undone. Once the brain is damaged it is changed for all time, and spontaneous recovery of its tissue does not occur as, for example, it does in a wound of the body. Too often this is a case of surgeons rushing in where angels fear to tread.

Medicine, like many other human activities, tends to pass through fashions. This is not necessarily a bad thing. It means that for a time attention is concentrated on one branch of the science or upon some special type of treatment. At present we are passing through the phase of mechanical forms of healing. This may be a swing from the interest which the discoveries of Freud aroused in psychopathology and psychological forms of treatment. No harm can be done as long as we regard the more extravagant claims with a wise scepticism. For the moment surgeons are

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inclined to tell us that by severing the prefrontal lobes of the brain they can produce marvellous cures. It is true that some cures seem to have been produced, but how many of these would have occurred spontaneously? We believe a great many. Again, enthusiastic psychiatrists insist that electrical convulsive treatments will cure all the severer forms of mental disease. Yet let us look at the careful experiment performed at the New York State Hospital, where 1,000 schizophrenic patients were treated by insulin, and 1,000 given electric shocks, whilst yet another 1,000 were left untouched as a control group. The result was that more patients recovered by insulin treatment (as one might have expected, since this is the therapy *par excellence* for them), but a greater number of those left without treatment had remissions than those who had been given electric shocks. Yet so great is the *itch to do something* that patients are still being given convulsions when insulin is not available.

There are other dangers not to the patient, but to psychological medicine, which too great an emphasis upon mechanical methods of treatment may produce. If one has a form of healing which can be applied to any patient, if no real diagnosis need be made, if everyone can be shot head foremost through a psychiatric sausage machine, there is the danger that young men will not bother to learn the finer points of this branch of medicine, and the art of diagnosis will fall into abeyance. This, the patient may say, is of no moment, since it is treatment, not diagnosis, which interests him. Yet it is just here where the danger lies. Unless the patient is properly diagnosed—if he is just a case for the machine—he will never be treated correctly. The shortest path in psychological medicine, as in every other branch, is the proper one. Firstly, the correct diagnosis must be made, then the best form of treatment must be considered, and finally it must be applied, not casually or impersonally, but by continuously regarding him as a human being who fears and suffers. The writer constantly sees patients who have some serious trouble, some constant anxiety or fear, who have been given insulin, convulsions, prolonged narcosis or whatnot, yet no one has taken them aside and treated them as human beings. No one has asked them to tell their troubles and open their minds. The mechanical treatments are not to be scorned, but they are valuable for only a small group of specially

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selected patients, and these patients are not accessible to psychological means. Those physicians who rush to apply mechanical treatments—by which we mean insulin shock, electrical convulsions, prolonged narcosis, etc.—without proper psychological investigations are demonstrating their own ignorance and maltreating their patients. Man is worthy of better treatment than a car or wireless set, and those who do not give it to him are betraying their trust.

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